TM 11-5805-262-12

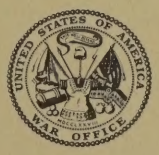
DEPARTMENT OF THE ARMY TECHNICAL MANUAL

OPERATOR'S AND ORGANIZATIONAL

MAINTENANCE MANUAL

SWITCHBOARDS, TELEPHONE, MANUA'

SB-22/PT AND SB-22A/PT



HEADQUARTERS, DEPARTMENT OF THE ARMY

15 DECEMBER 1960

TECHNICAL MANUAL
NO. 11–5805–262–12

HEADQUARTERS,
DEPARTMENT OF THE ARMY
WASHINGTON 25, D. C., *15 December 1960*

SWITCHBOARDS, TELEPHONE, MANUAL SB–22/PT AND SB–22A/PT

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***This manual supersedes so much of TM 11–2202, 23 August 1956, including C1, 10 July 1957, C2, 7 November 1957, C3, 17 April 1959, and C4, 7 January 1960, as pertains to operation, installation, and organizational maintenance of the equipment. This manual also supersedes TM 11–5805–262–10P, 23 June 1959, and so much of TM 11–5805–262–20P, 8 June 1959 as pertains to the maintenance allocation chart.**

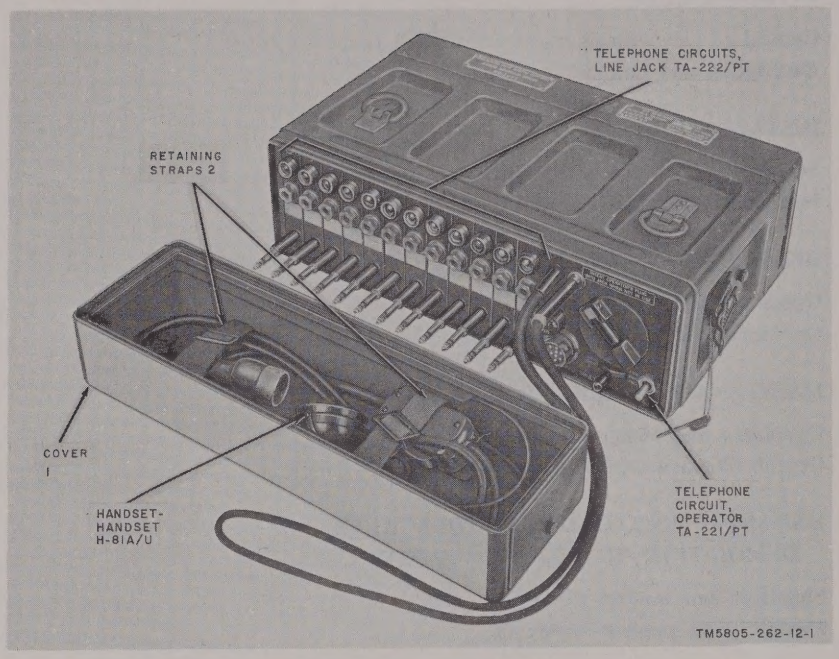


Figure 1. Switchboard, Telephone, Manual SB–22/PT or SB–22A/PT, less accessory kit.

CHAPTER 1

INTRODUCTION

Section I. GENERAL

1. Scope

a. This manual describes Switchboards, Telephone, Manual SB–22/PT and SB22A/PT and covers their installation, operation, and organizational maintenance. It includes operation under usual and unusual conditions, cleaning and inspection of the equipment, and replacement of parts available to first and second echelon maintenance.

b. Official nomenclature followed by (*) is used to indicate all models of the equipment covered in this manual. Thus, Switchboard, Telephone, Manual SB–22(*)/PT represents Switchboards, Telephone, Manual SB–22/PT and SB–22A/PT.

2. Forms and Records

a. Unsatisfactory Equipment Reports.

(1) Fill out and forward DA Form 468 (Unsatisfactory Equipment Report) to the Commanding Officer, U. S. Army Signal Materiel Support Agency, ATTN: SIGMS-ML, Fort Monmouth, N. J., as prescribed in AR 700–38.

(2) Fill out and forward AF TO Form 29 (Unsatisfactory Equipment Report) to the Commander, Air Materiel Command, Wright-Patterson Air Force Base, Ohio, as prescribed in AF TO 00–35D–54.

b. Report of Damaged or Improper Shipment. Fill out and forward DD Form 6 (Report of Damaged or Improper Shipment) as prescribed in AR 700–58 (Army), Navy Shipping Guide, Article 1850–4 (Navy), and AFR 71–4 (Air Force).

c. Preventive Maintenance Forms. Prepare DA Form 11–246 (fig. 22 and 23) (Maintenance Check List for Signal Equipment (Telephone Switchboard-Field)), in accordance with the instructions on the form.

d. Parts List Form. Forward DA Form 2028 (Recommended Changes to DA Technical Manual Parts List or Supply Manuals 7, 8, and 9) to the Commanding Officer, U. S. Army Signal Materiel Support Agency, ATTN: SIGMS-MIL, Fort Monmouth, N. J., with comments on parts listings.

e. Comments. Forward all other comments on this publication direct to the Commanding Officer, U. S. Army Signal Materiel Support Agency, ATTN: SIGMS-PA2d, Fort Monmouth, N. J.

Section II. DESCRIPTION AND DATA

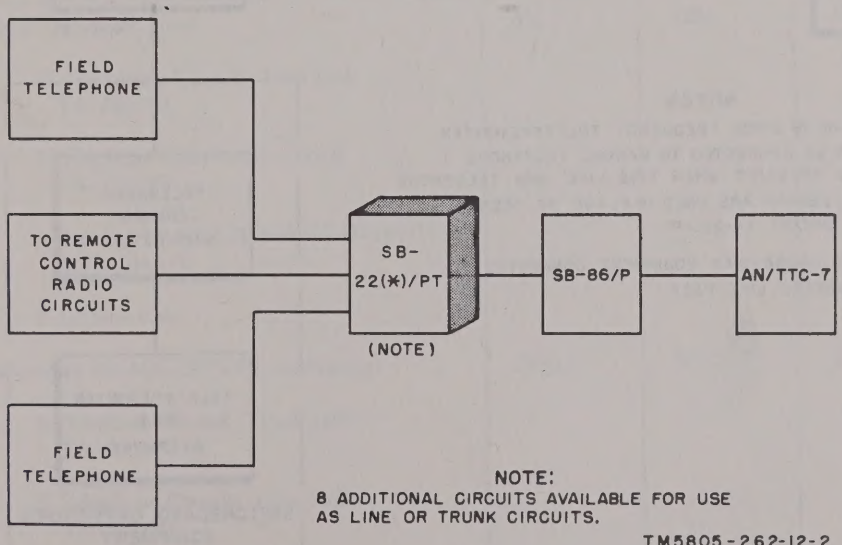


Figure 2. Local battery telephone circuits and remote controlled radio circuits, using Switchboard, Telephone, Manual SB–22(*)/PT.

3. Purpose and Use

Switchboard, Telephone, Manual SB–22(*)/PT is a lightweight, local battery, field-type switchboard that provides facilities for interconnecting 12 voice frequency (vf) circuits. The SB–22(*)/PT is normally used to interconnect local battery telephone circuits, remote controlled radio circuits, and voice frequency teletypewriter circuits. One common battery signaling trunk circuit is provided when one Telephone Circuit, Line Jack TA–222/PT is replaced by Telephone Circuit, Trunk Jack TA–326/PT. A typical use of the SB–22(*)/PT in a local battery telephone and remote controlled radio system is shown in figure 2. A typical use of the SB–22(*)/PT in a vf teletypewriter system is shown in figure 3.

4. Technical Characteristics

Local battery lines or trunks.[1] 12.

Common battery signaling trunk.[2] 1.

Ringing:

Manual .....20 cycles per second, 90-100 volts (provided by hand ringing generator).

Protection .....Lightning arrestor, each line or trunk.

Power requirements:

Operator's telephone 3 volts dc (2 Batteries BA–30).

Night alarm ..... 3 volts dc (2 Batteries BA–30).

[1] To provide five additional local battery lines or trunks, five Telephone Circuits, Line Jack TA–222/PT may be substituted for Telephone Circuit, Operator's TA–221/PT.

[2] A common battery signaling trunk may be provided by substituting Telephone Circuit, Trunk Jack TA–326/PT for one Telephone Circuit Line Jack TA–222/PT.

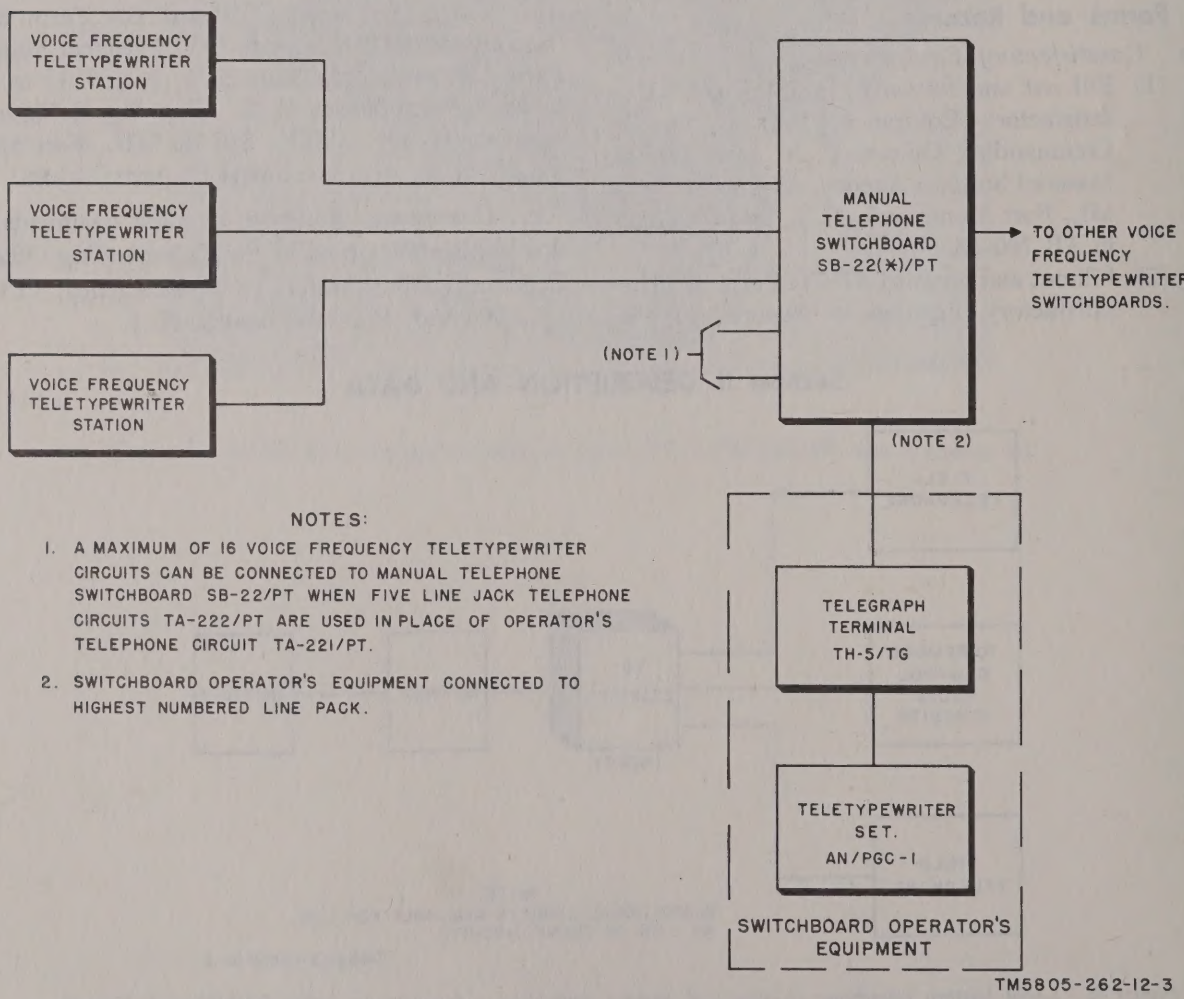

VOICE FREQUENCY TELETYPEWRITER STATION
VOICE FREQUENCY TELETYPEWRITER STATION
VOICE FREQUENCY TELETYPEWRITER STATION
MANUAL TELEPHONE SWITCHBOARD SB-22(*)/PT
(NOTE 1)
TO OTHER VOICE FREQUENCY TELETYPEWRITER SWITCHBOARDS.
(NOTE 2)
TELEGRAPH TERMINAL TH-5/TG
TELETYPEWRITER SET. AN/PGC-1
SWITCHBOARD OPERATOR'S EQUIPMENT
NOTES:
1. A MAXIMUM OF 16 VOICE FREQUENCY TELETYPEWRITER CIRCUITS CAN BE CONNECTED TO MANUAL TELEPHONE SWITCHBOARD SB-22/PT WHEN FIVE LINE JACK TELEPHONE CIRCUITS TA-222/PT ARE USED IN PLACE OF OPERATOR'S TELEPHONE CIRCUIT TA-221/PT.
2. SWITCHBOARD OPERATOR'S EQUIPMENT CONNECTED TO HIGHEST NUMBERED LINE PACK.
TM5805-262-12-3

Figure 3. Vf teletypewriter circuits, using Switchboard, Telephone, Manual SB–22(*)/PT.

5. Table of Components

a. Switchboard, Telephone, Manual SB–22/PT.

Quantity	Item	Height (in.)	Depth (in.)	Width (in.)	Unit weight (lb)
1	Bare unit containing: 12 Telephone Circuits, Line Jack TA–222/PT. 1 Telephone Circuit Operator's TA–221/PT. 1 Handset-Headset H–81A/U, H–144/U or H–144A/U. 1 battery case	5¼	12½	16	30
1	Accessory Kit MX–230/PT containing: 3 Telephone Circuits, Line Jack TA–222/PT. 2 lamps, incandescent, or	4½	10½	15½	4
1	Accessory Kit MX–230A/PT containing: 3 Telephone Circuits, Line Jack TA–222/PT. 2 lamps, incandescent	9 13/16	5 21/64	5 15/64	4.9

b. Switchboard, Telephone, Manual SB–22A/PT.

Quantity	Item	Height (in.)	Depth (in.)	Width (in.)	Weight (lb)
1	Bare Unit containing: 12 Telephone Circuits, Line Jack TA–222/PT. 1 Telephone Circuit, Operator's TA–221/PT. 1 Handset-Headset H–81A/U, H–144/U or H–144A/U. 1 battery case	5¼	12½	16	30
1	Accessory Kit MX–2915/PT containing: 1 Telephone Circuit, Trunk Jack TA–326/PT. 2 Telephone Circuits, Line Jack TA–222/PT. 2 lamps, incandescent	9 13/16	5 21/64	5 15/64	4.9

6. Common Names

The components of Switchboard, Telephone, Manual SB–22(*)/PT to which common names are assigned are listed below:

Item	Common name
Switchboard, Telephone, Manual SB–22(*)/PT.	Switchboard.
Telephone Circuit, Line Jack TA–222/PT.	Line Pack.
Telephone Circuit, Operator's TA–221/PT.	Operator's pack.
Handset-Headset H–81A/U, H–144/U, or H–144A/U.	Operator's telephone set.
Telephone Circuit, Trunk Jack TA–326/PT.	Trunk pack.
Accessory Kit MX–230/PT, MX–230A/PT, or MX–2915/PT.	Accessory kit.

7. Description of Switchboard, Telephone, Manual SB–22(*)/PT

The switchboard is shown in figure 1. The line and miscellaneous binding posts are mounted at the rear of the switchboard. The switchboard is immersionproof when the front cover is fastened in position.

a. Operator's Pack (fig. 4). Connections are made to the operator's pack through plug-in connectors at the rear of the operator's pack.

b. Line and Trunk Packs (fig. 5). Connections are made to the line and trunk packs through plug-in connectors at the rear of each pack.

c. Accessory Kits (fig. 6). Accessory Kit MX–230/PT or MX–230A/PT is provided with the SB–22/PT, and Accessory Kit MX–2915/PT is provided with the SB–22A/PT. The MX–230A/PT and MX–2915/PT are identical except that the MX–230A/PT contains three line packs, and the MX–2915/PT contains two line packs and one trunk pack.

d. Operator's Telephone Set (fig. 7). The operator's telephone set can be converted to a handset by removing the headband from the receiver.

8. Additional Equipment Required

The equipment listed in *a* and *b* below is required when the switchboard is used to provide the service indicated. The equipment listed in *c* below will assist the switchboard operator when the calling rate is high. The equipment must be requisitioned separately through normal supply channels.

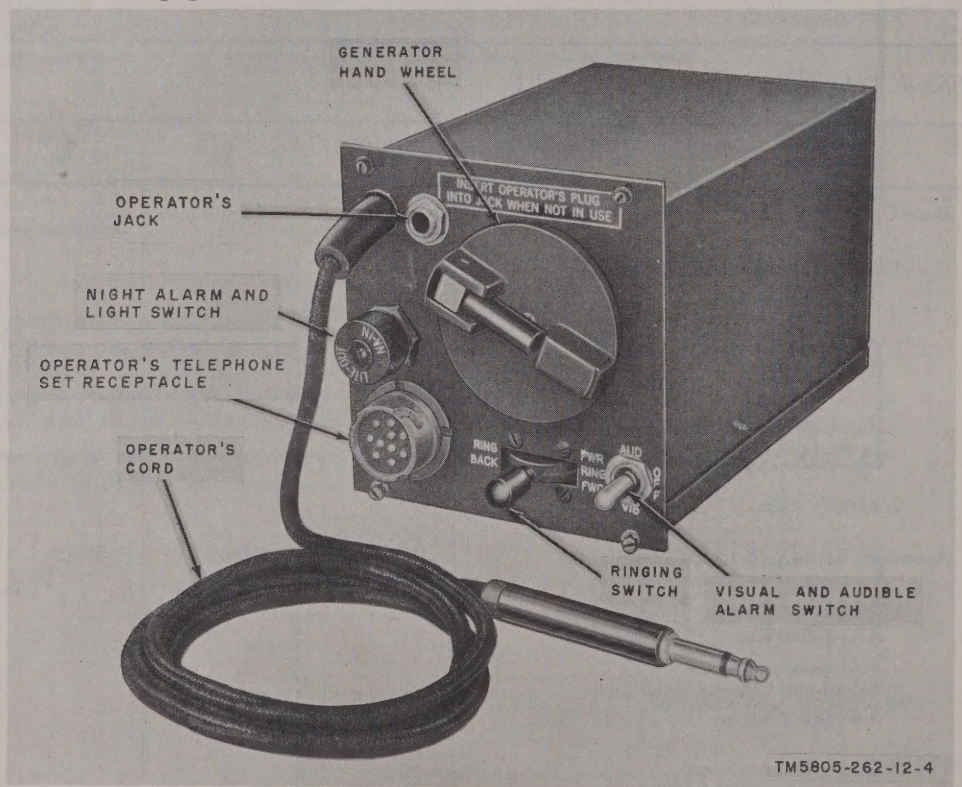


Figure 4. Telephone Circuit, Operator's TA–221/PT.

a. Telephone and Remote Controlled Radio Circuits. Four Batteries BA–30 are required to provide direct current (dc) for the night alarm and the operator's telephone set. A ground rod, such as Ground Rod MX–148/G, is required to ground the switchboard.

b. Vf Teletypewriter Circuits. Telegraph Terminal TH–5/TG and Teletypewriter Set AN/PGC–1 are required if the switchboard is to be used to interconnect vf teletypewriter circuits. Two Batteries BA–30 are required to provide dc for the night alarm.

c. Power Ringing. An external source of ringing current, such as Converter M–222 or M–222–A, Power Supply PP–990/G, Interrupter PE–250, or Static Ringing Generator TA–248/TT, is required if power ringing is to be used on the switchboard.

9. Differences in Models

a. Switchboard, Telephone, Manual SB–22(*)/PT may be equipped with Generator, Hand Ringing G–41/PT, G–42/PT, or G–42A/PT. The G–41/PT, G–42/PT, and G–42A/PT are identical in size and operating characteristics and are interchangeable; however, the internal components are different and are not interchangeable.

b. The SB–22/PT and SB–22A/PT are identical except that in the SB–22A/PT, one of the line packs, in the accessory kit, is replaced by a trunk pack.

c. The H–81A/U, H–144/U, or H–144A/U may be supplied with either the SB–22/PT or SB–22A/PT. The H–81A/U, H–144/U, and H–144A/U are interchangeable.

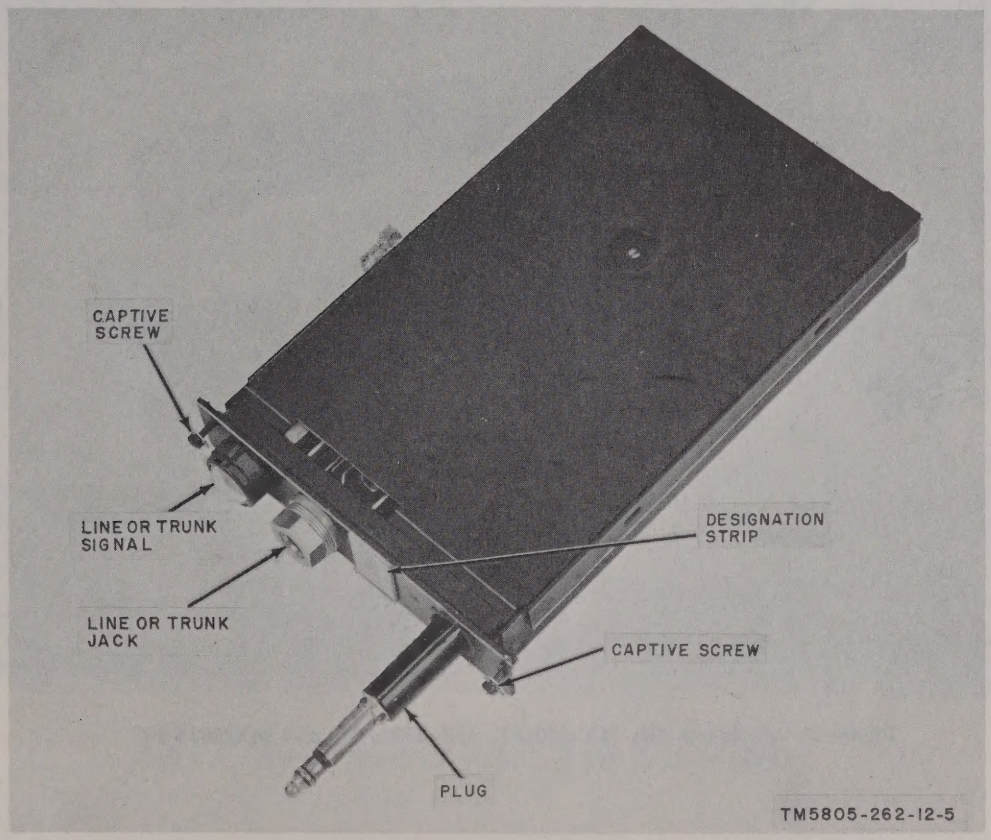


Figure 5. Telephone Circuit, Line Jack TA–222/PT or Telephone Circuit, Trunk Jack TA–326/PT.

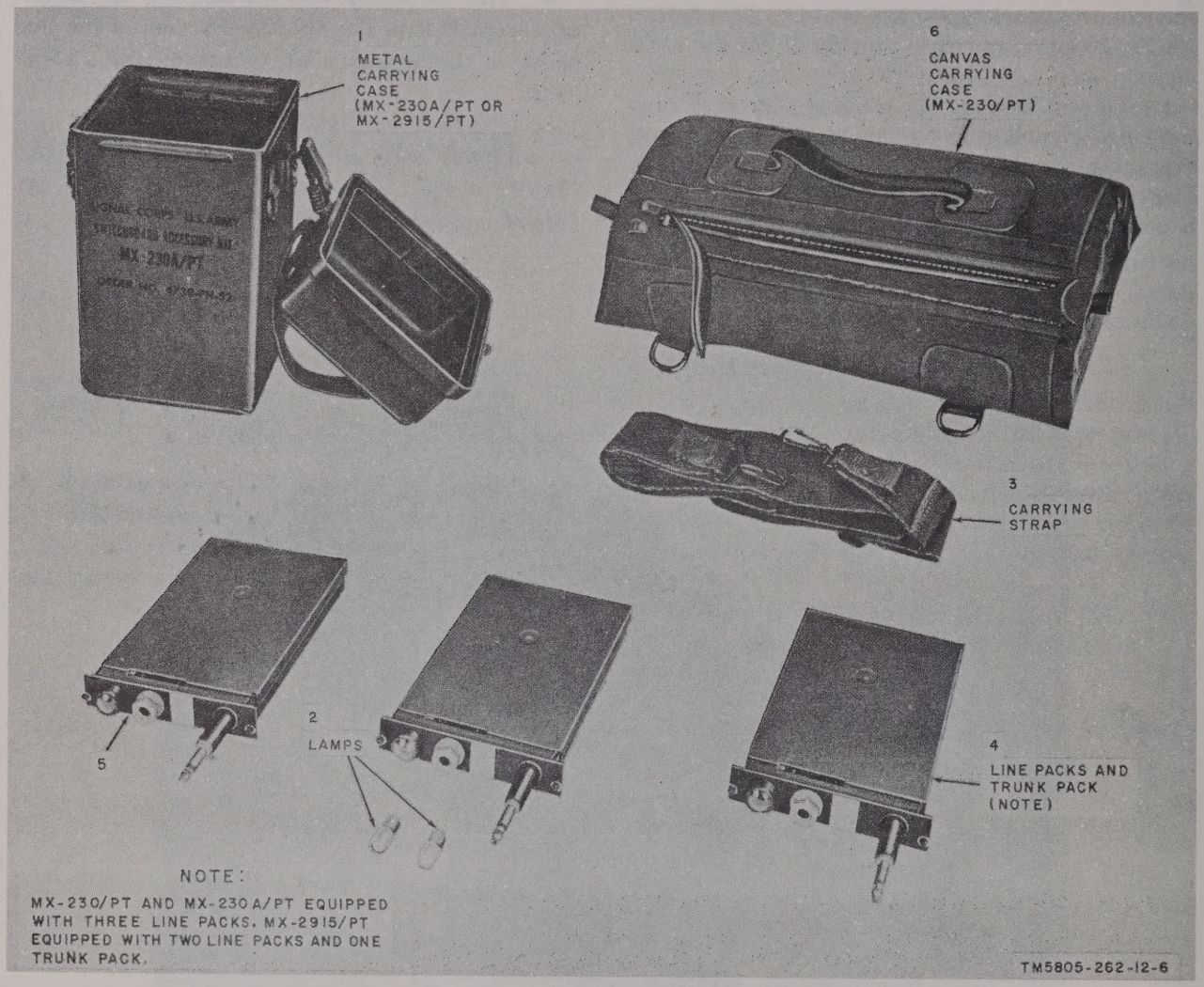


Figure 6. Accessory Kits MX–230/PT, MX–230A/PT, and MX/2915/PT.

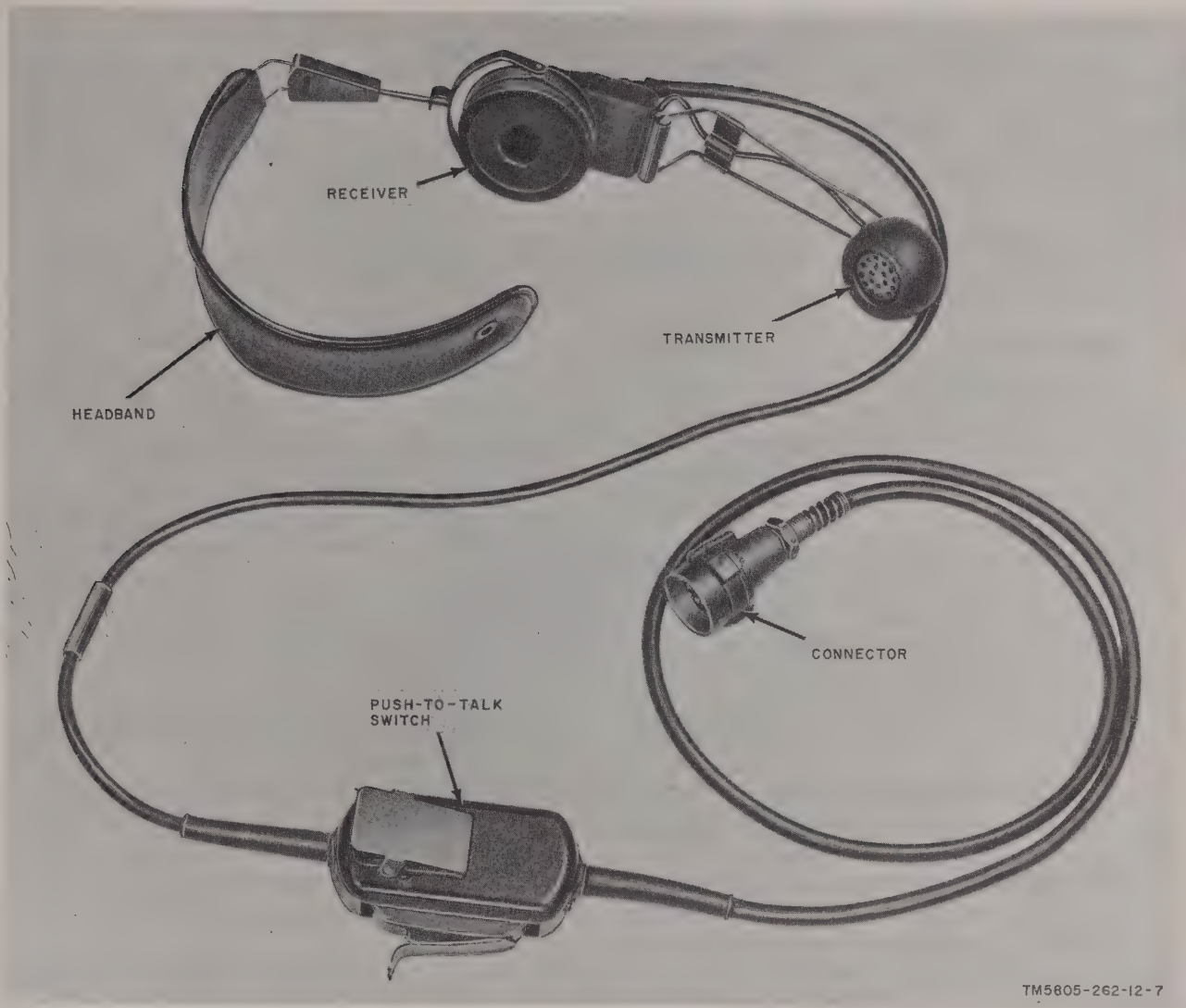


Figure 7. Handset-Headset H–81A/U, H/144/U, or H–144A/U.

CHAPTER 2

INSTALLATION

Section I. SERVICE UPON RECEIPT OF EQUIPMENT

10. Siting

a. The switchboard *must* be protected from dampness, dust, dirt, ice, or snow. If possible, during subfreezing temperatures, the switchboard should be located in a heated shelter. The switchboard may be installed in a foxhole, bunker, or building.

b. The switchboard should be located centrally with respect to the line and trunk circuits terminated on the switchboard.

11. Unpacking

a. Packaging Data. When packed for export shipment, the components of Switchboard, Telephone, Manual SB–22(*)/PT are packed as shown in figure 8. When packed for domestic shipment, the SB–22(*)/PT is sealed in cartons and packed in one nailed wooden box.

b. Removing Contents, Export Packing (fig. 8).

(1) Place the nailed wooden box on the floor or other flat surface.

(2) Cut the metal straps and bend them back to prevent injury to personnel.

(3) Pull the nails from the wooden cover and lift and cover from the nailed wooden box.

(4) Cut the waterproof case liner and lift the sealed cartons for the switchboard and the accessory kit from the nailed box.

(5) Open the sealed carton and the moisture-vaporproof barrier containing the switchboard. Remove the carton from inside the moisture-vaporproof barrier.

(6) Open the carton and remove the switchboard.

(7) Open the sealed carton for the accessory kit and the moisture-vaporproof barrier and remove the accessory kit.

c. Removing Contents, Domestic Packing.

(1) Place the nailed wooden box on the floor or other flat surface.

(2) Pull the nails from the wooden cover and lift it from the nailed wooden box.

(3) Open the sealed carton for the switchboard and remove the switchboard.

(4) Open the sealed carton for the accessory kit and remove the accessory kit.

12. Checking Unpacked Equipment

Check the equipment against the packing list. When no packing list accompanies the equipment, use the basic issue items list, appendix III, to check the equipment which *probably* was packed. Follow the procedures given in *a* through *e* below to check for damage incurred during shipment.

a. Check the contents of the accessory kits (fig. 6) as follows:

(1) Remove the line and trunk packs and the two lamps.

(2) Check each line pack and the trunk pack (if supplied) for dented cases, damaged cords and plugs, broken or missing signal covers, and damaged jacks.

(3) Check the two lamps to be sure they are not broken.

b. Remove the front cover from the switchboard

Outside dimensions (in.)	Volume (cu ft)	Unit Weight	Contents
14½ x 19 x 17¼	2.8	58	Switchboard, Telephone, Manual SB–22/PT, with Accessory Kit MX–230/PT.
or			
9½ x 28½ x 16½	2.6	58	Switchboard, Telephone, Manual SB–22/PT, with Accessory Kit MX–230A/PT.
or			
9½ x 28½ x 16½	2.6	58	Switchboard, Telephone, Manual SB–22A/PT, with Accessory Kit MX–2915/PT.

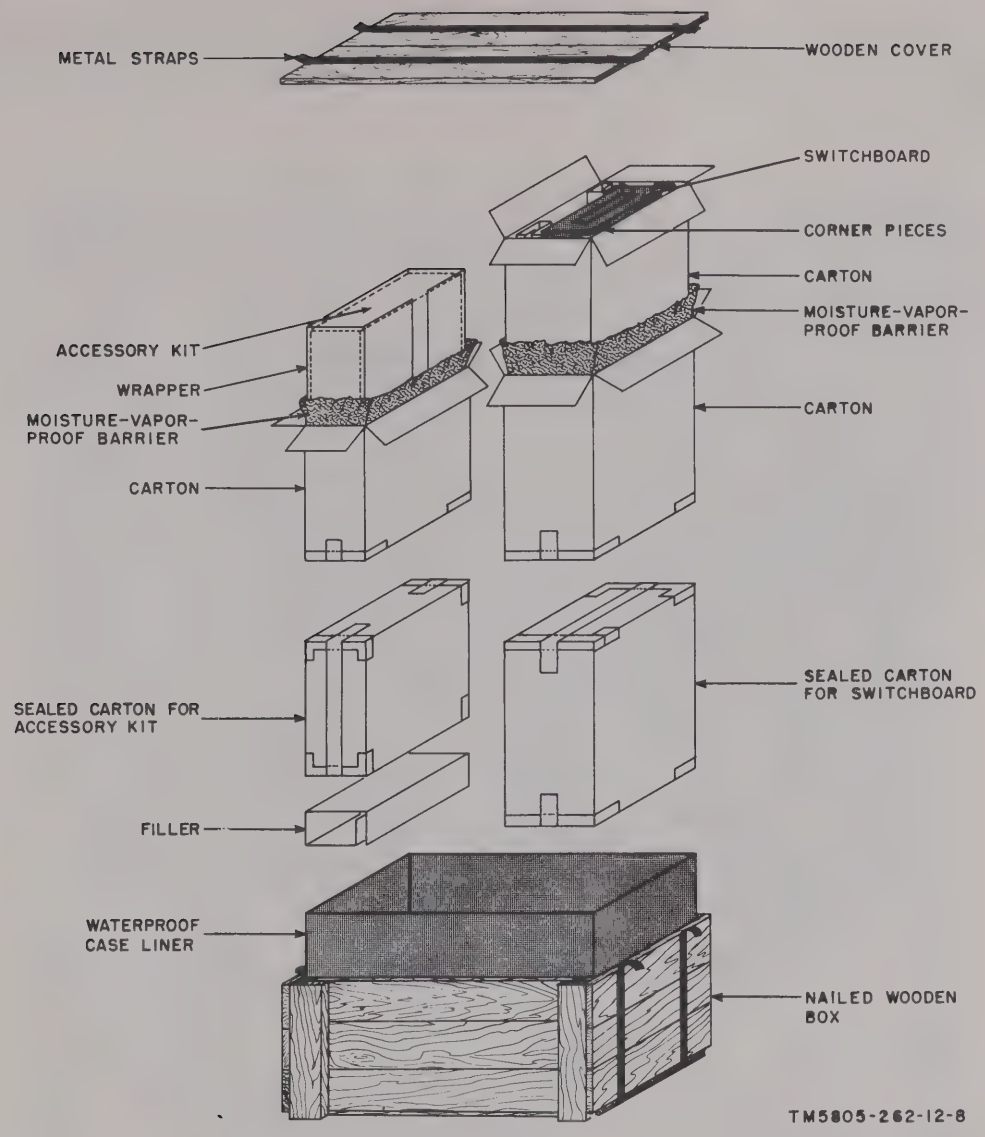


Figure 8. Switchboard, Telephone, Manual SB–22(*)/PT, typical export packaging diagram.

((1) through (4) below). Check the face of the switchboard ((5) through (8) below).

(1) Place the switchboard on a table or other flat surface.

(2) Lift each cover latch handle off its stud (fig. 9).

(3) Turn the cover latch handles one-half turn so that the cover latch cable is loose.

(4) Remove each of the clips from the studs on the front cover. Remove the front cover from the switchboard.

(5) Check the operator's telephone set (fig. 1) inside the front cover to be sure it is not damaged. Check the retaining straps inside the cover to be sure that they have not been cut or broken.

(6) Check each line pack to be sure none of the controls have been damaged. Pull each cord out of the line pack and check to see that it retracts properly.

(7) Check the operator's pack to be sure that none of the controls have been damaged during shipment.

(8) Replace the front cover.

c. Open the rear cover of the switchboard as shown in figure 10. Check to be sure that the cover swings free on its hinge. Check all of the binding posts in the rear compartment of the switchboard to be sure that none of them has been damaged during shipment. Close the rear cover.

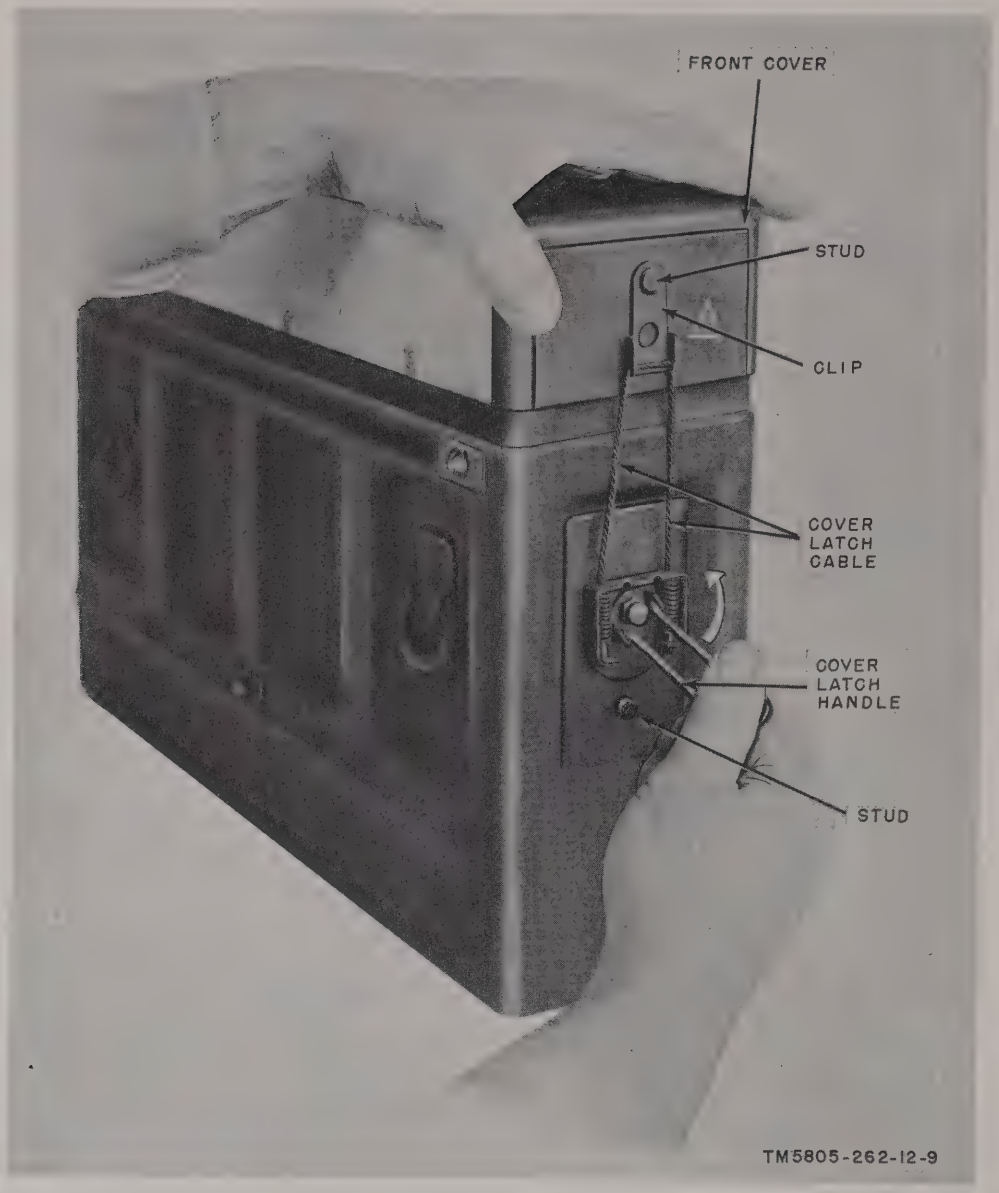


Figure 9. Removing front cover from switchboard.

d. Check the exterior of the switchboard to be sure that the switchboard case has not been damaged during shipment.

e. If the equipment is used or reconditioned, check the equipment for tags or other markings that may indicate a modification of the equipment.

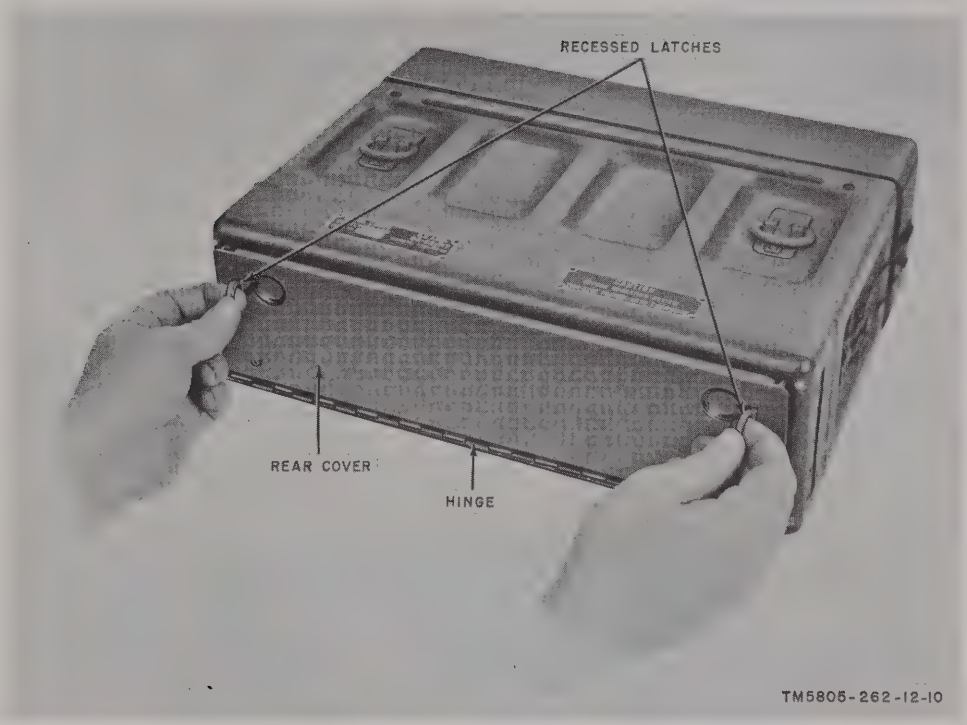


Figure 10. Opening rear door of switchboard.

13. Preinstallation Checks

Before installing and connecting the switchboard, perform the procedures given in *a* through *c* below:

a. Batteries.

(1) Open the rear cover of the switchboard (fig. 10).

(2) Place the index fingers on the end caps of the battery case (fig. 11).

(3) Pull *straight* out on the battery case with the index fingers to remove the battery case from the switchboard.

(4) Slide two Batteries BA–30 into each end of the battery case (fig. 12). Be sure that each battery is positioned so that the top of the battery is toward the open end of the battery case.

(5) Replace the two end caps.

Caution: **Do not screw the end caps onto the battery case too tightly; the battery case or the end caps may be damaged.**

(6) Place the battery case on the spring contacts and press it straight into the spring contacts. Be careful not to damage the spring contacts.

b. Line Packs and Trunk Pack.

Note. The test procedure for the trunk pack is the same as the test procedure for the line packs.

(1) Connect a short piece of Wire WD–1/TT between a field telephone and the line binding posts of the line pack to be checked.

(2) Connect the operator's telephone set connector (fig. 7) to the operator's telephone set receptacle on the operator's pack (fig. 4).

(3) Operate the visual and audible alarm switch to VIS.

(4) Operate the hand ringing generator on the field telephone. The line signal on the line pack should operate to *white* and the light on the operator's pack should light.

(5) Insert the plug of the operator's cord into the jack on the line pack. The line signal should operate to *black* and the light on the operator's pack should go out.

(6) Operate the switch in the cord of the operator's telephone set (push-to-talk switch) to the first position (fig. 19), and check

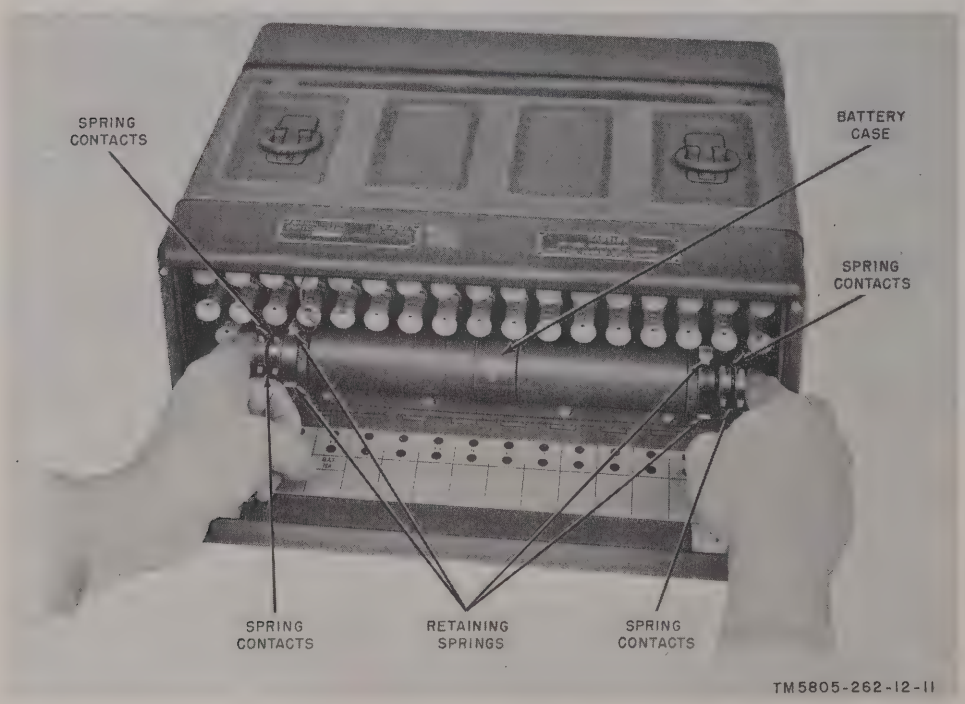


Figure 11. Removing battery case from switchboard.

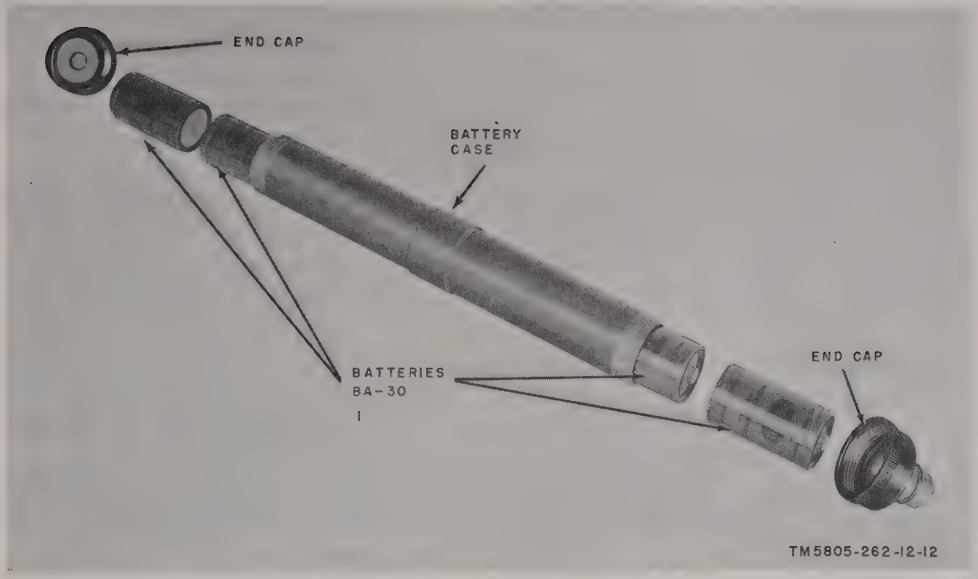


Figure 12. Installation of batteries in battery case.

to see that two-way conversation is possible.

(7) Follow the procedure given in (1) through (6) above for each of the line or trunk packs.

Note. Do not disconnect the field telephone from the last line pack checked.

c. Operator's Pack.

(1) Operate the visual and audible alarm switch from VIS to AUD.

(2) Operate the hand ringing generator on the field telephone. When the line signal on the line pack operates from *black* to *white,* the night alarm buzzer should sound.

(3) Insert the plug of the operator's cord into the jack on the line pack; the line signal should return to black and the buzzer should stop.

(4) Push the RING BACK-PWR RING FWD switch to the RING BACK position and turn the hand ringing generator on the operator's pack. The ringer in the field telephone should sound.

(5) Remove the plug of the operator's cord from the jack of the line pack connected to the field telephone and insert it into the jack of another line pack. Insert the plug of the cord on the second line pack into the jack of the line pack connected to the field telephone.

(6) Turn the hand ringing generator on the operator's pack; the ringer on the field telephone should sound.

(7) Remove the two plugs from the jacks and insert the plug of the operator's cord into the jack on the operator's pack.

(8) Pull out the LITE-OUT—NA-IN knob; the lamp should light.

(9) Push the LITE-OUT—NA-IN knob into its original position; the lamp should be extinguished.

14. Installing One Switchboard

Caution: **When installing the switchboard, do not lay it on the bare ground. Lay the switchboard on a shelter-half, poncho, or other canvas cover. During inclement weather, fold the edges of the cover back over the switchboard after it has been installed to prevent it from getting wet.**

a. Select a flat surface, such as a table, packing box, or a ledge in a foxhole.

b. Lay the switchboard on its side so that the nameplate is up.

c. Release the front cover latch on each end of the switchboard and remove the front cover from the switchboard (para 12*b*).

d. Loosen the retaining straps inside the front cover (fig. 1) and remove the operator's telephone set.

e. Place the cover on top of the switchboard (yellow side forward) and secure it in place with the front cover latches (fig. 13).

f. If the trunk pack is to be installed, follow the procedure given below:

(1) Unscrew the captive screws on line pack No. 1 or No. 12.

(2) Insert the plug of the cord into the jack of the line pack.

(3) Grasp the plug and pull the line pack out of the switchboard case. Be sure to pull the line pack straight out of the switchboard case to prevent bending the plug or jack.

(4) Insert the plug of the cord into the jack on the trunk pack.

(5) Slide the trunk pack into the switchboard case and tighten the captive screws.

(6) Remove the plug from the jack and *mark the trunk pack* to indicate the trunk destination.

15. Installing Two Switchboards

a. Install the first switchboard as explained in paragraph 14, but do *not* place the cover on top of the switchboard.

b. Remove the front cover from the second switchboard. Do *not* remove the operator's telephone set from the inside of the cover.

c. Remove the operator's pack from the second switchboard as follows:

(1) Unscrew the captive screw located in each corner of the front of the operator's pack.

(2) Connect the operator's telephone set connector to the receptacle on the operator's pack.

(3) Grasp the operator's telephone set connector and pull the operator's pack from the switchboard case.

Caution:* On new equipment, the operator's pack may be difficult to remove. Remove the line pack nearest the operator's pack, if necessary, before removing the operator's pack. *Be sure to pull the operator's pack straight out of the switchboard case to prevent damaging the connectors at the rear of the operator's pack.

d. Install five line packs from the two accessory kits in the space from which the operator's pack was removed (fig. 14) as follows:

(1) Slide one of the line packs into the switchboard case beside line pack No. 12. Be sure the receptacle at the rear of the line pack is aligned with the plug at the back of the switchboard case.

(2) Push the line pack into the switchboard case until the captive screws at the top and bottom of the line pack are against the switchboard case.

(3) Screw the captive screws into the tapped holes. Be careful not to break the screws by tightening them too tight.

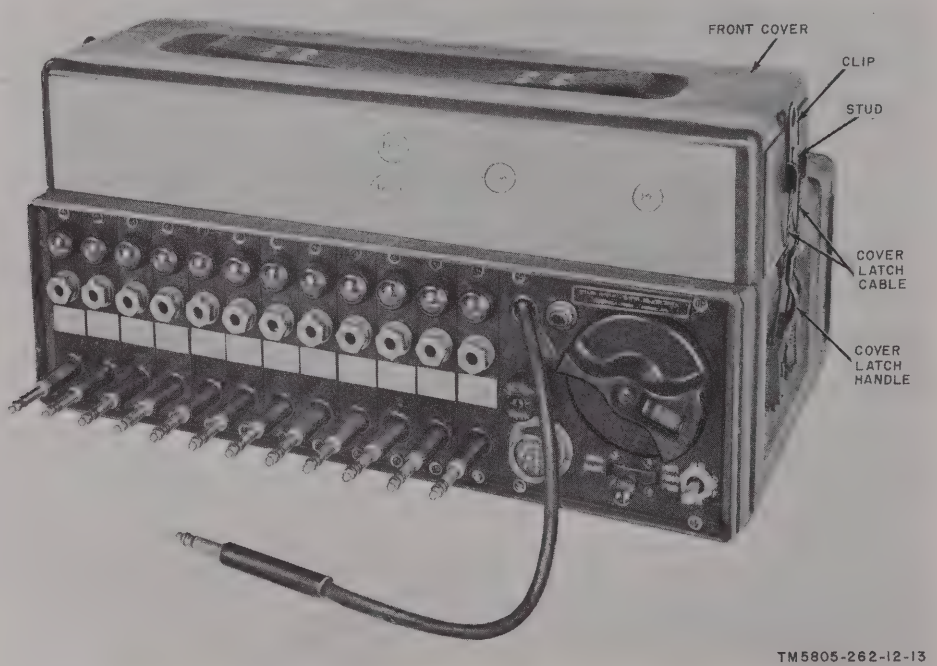


Figure 13. Switchboard cover in operating position.

(4) Install the other four line packs as explained in (1) through (3) above.

e. Position the second switchboard on top of the first switchboard. Be sure the front and sides of the two switchboards are in line.

f. Secure one of the front covers on top of the second switchboard with the cover latches (fig. 15) of the second switchboard.

g. Secure the second switchboard to the first switchboard with the cover latches of the first switchboard.

16. Grounding Procedures

a. Grounding One Switchboard.

(1) Drive a ground rod, such as Ground Rod MX–148/G, into the ground at the spot selected. Refer to TM 11–676 for additional information concerning grounding procedures.

(2) Strip the insulation from the ends of both conductors of a piece of Wire WD–1/TT. Twist the conductors together at each end of the wire.

(3) Connect the conductors at one end of wire to the terminal on the ground rod.

(4) Slide the conductors at the other end through the slotted gasket in the switchboard and connect the conductors to the GRD binding post.

b. Grounding Two Switchboards.

(1) Connect a short piece of WD–1/TT between the GRD binding posts on the upper and lower switchboards. Be sure to pass the wire through the slotted gasket in each switchboard.

(2) Connect one of the switchboards to the ground rod as explained in *a* above.

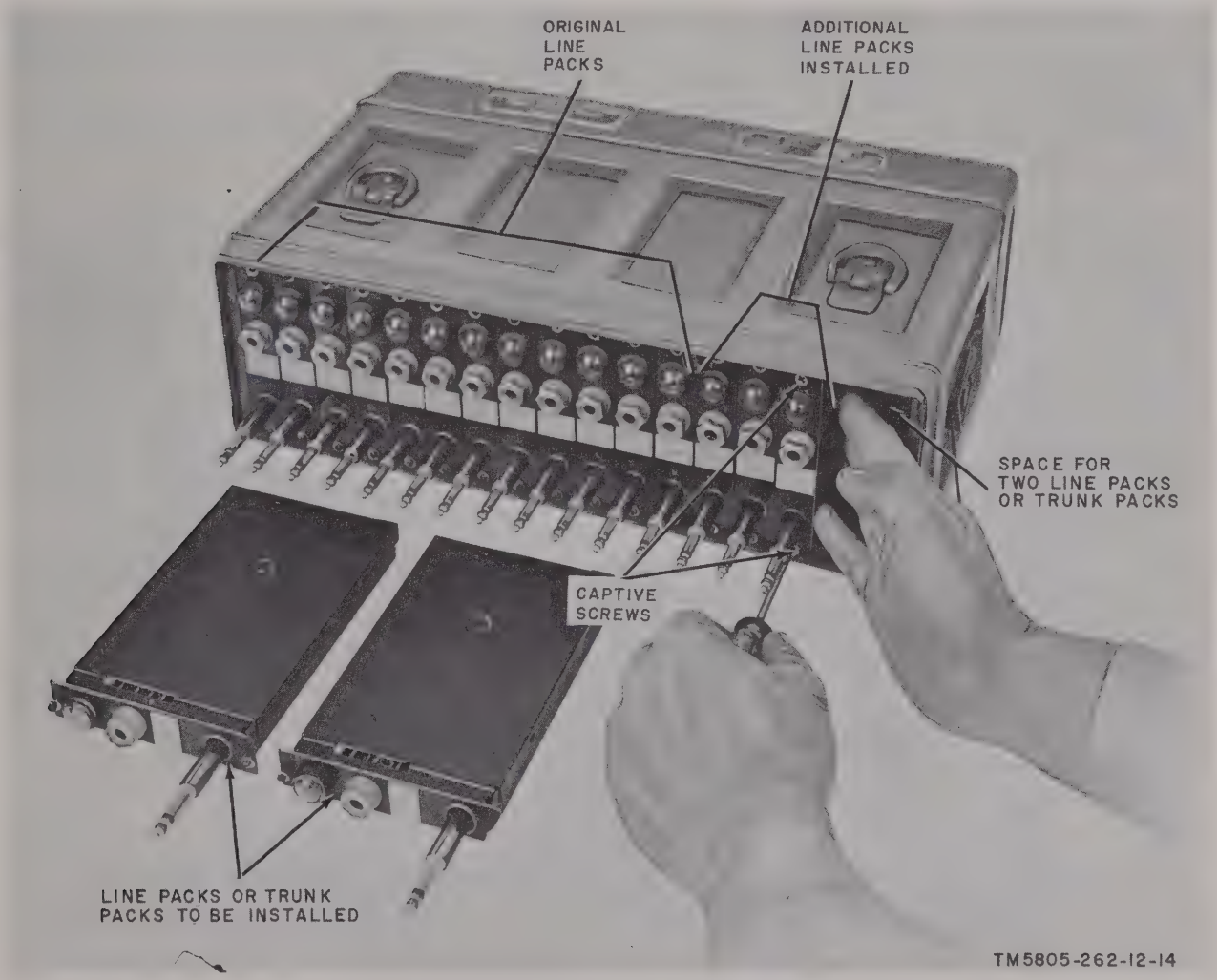

ORIGINAL LINE PACKS
ADDITIONAL LINE PACKS INSTALLED
SPACE FOR TWO LINE PACKS OR TRUNK PACKS
CAPTIVE SCREWS
LINE PACKS OR TRUNK PACKS TO BE INSTALLED
TM5805-262-12-14

Figure 14. Installing additional line packs.

17. Telephone Line and Trunk Connection

Terminate each telephone line or trunk as it is brought to the switchboard site as follows:

a. Remove about three-quarters of an inch of insulation from each conductor.

b. Separate the copper strands from the steel strands in each conductor.

c. Wrap the copper strands around the steel strands in each conductor.

d. Fold about 6 inches of the wire back and pass the loop through the slit in the rubber gasket at one end of the switchboard.

e. Pull on the loop until the end of the wire is pulled through the rubber gasket. Pull enough slack through the gasket to reach the desired line pack binding posts.

f. Place the tip of a screwdriver in the slot of one of the binding posts and push in on the binding posts (fig. 16).

g. Slide the bare end of the conductor into the hole in the center of the top of the binding post.

h. Remove the screwdriver from the top of the binding post. The top of the binding post will spring out and the conductor should be firmly clamped in the binding post. Pull gently on the conductor to be sure it is clamped firmly in the binding post.

i. Connect the other conductor to the other binding post in the desired circuit by following the instructions in *f* through *h* above.

j. Dress the wire into the space between the two rows of binding posts and pull all excess slack out of the switchboard through the slit in the rubber gasket to provide a drip loop in the line wire.

k. Record the line number in the space provided on the rear door and on the designation strip on the front of the line pack.

Note. Be sure the trunk circuit is terminated on the trunk pack binding posts.

18. Interconnection of SB–22(*)/PT and SB–86/P

When the SB–22(*)/PT and the SB–86/P are being used to terminate both landlines and remote control radio circuits, connect the individual remote control radio circuits to the SB–22/PT as explained in paragraph 19 and connect the two switchboards as explained below.

a. Lift the log plate from the top of the SB–86/P and position the SB–22/PT on top of the top jack field section (fig. 21).

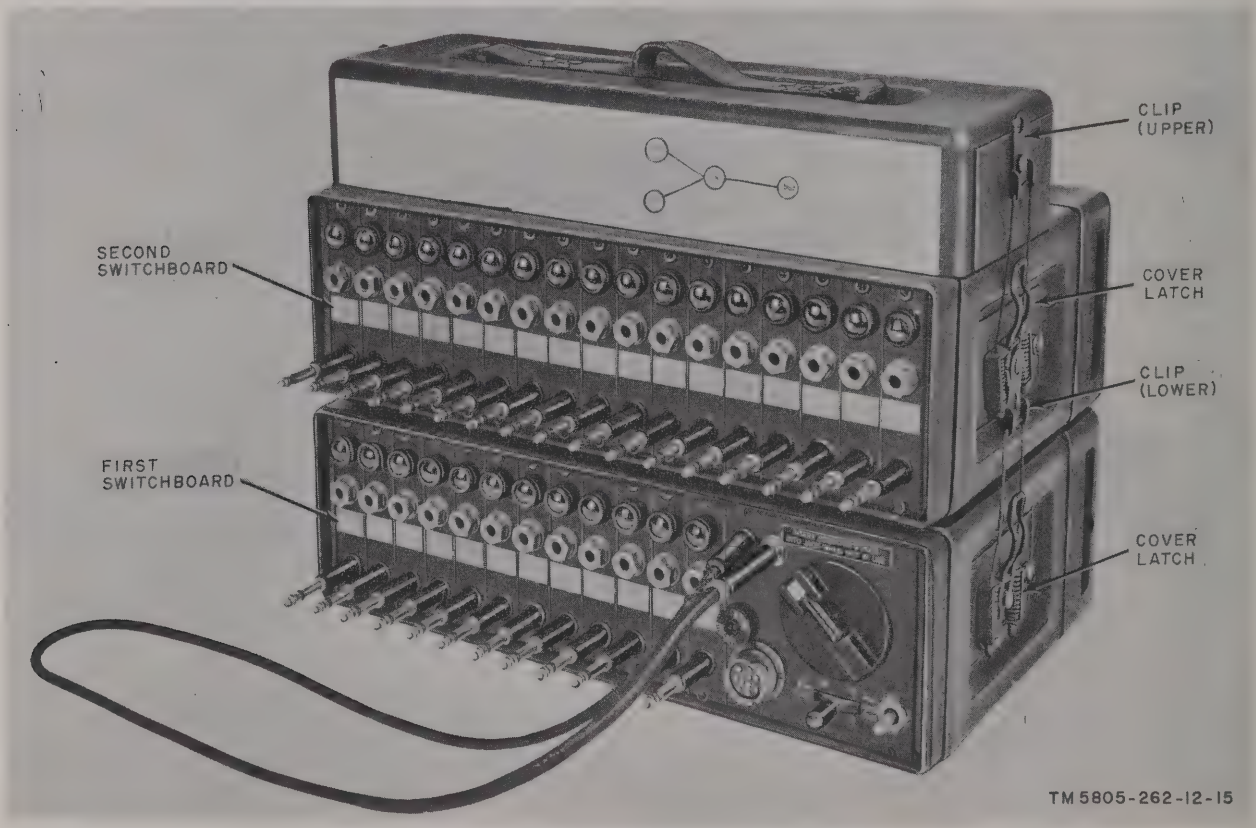


Figure 15. Installation arrangement for two switchboards.

b. Hook the cover latch cable under the front catches on the jack field section. Tighten the cover latches by turning the cover latch handles one-half turn.

c. Connect the EMG OPR binding posts at the rear of the SB–22(*)/PT to the emergency operator binding posts on the front of the SB–86/P (fig. 17).

d. Connect the GEN. POWER RING (16) binding posts at the rear of the SB–22/PT to the EXT GEN binding posts at the rear of the operator's pack in the SB–86/P.

e. Connect one of the START POWER RING (17) binding posts on the SB–22/PT to the ST VIB binding post on the SB–86/P, and connect the other START POWER RING binding post to the +24V binding post on the SB–86/P.

f. Connect the operator's telephone set connector to the operator's telephone set receptacle on the front of the operator's pack in the SB–22(*)/PT. Clamp the push-to-talk switch to the side of the SB–86/P (fig. 21) so that it can be conveniently reached by the operator, and operate the switch to the locked position (C, fig. 19).

19. Remote Control Radio Circuit Connection (SB–22(*)/PT Only)

a. Remove about three-fourths inch of insulation from each of the conductors in the remote control radio circuit.

b. Insert the wire through the slit in the rubber gasket at the end of the switchboard.

c. Pull enough wire through the rubber gasket to reach the binding posts on the desired line pack.

d. Connect the bare ends of the wire to the binding posts on the desired line pack.

e. Check the line signal to be sure it has not operated to the white position. If the signal is in the white position, insert the operator's cord into the associated jack and remove it immediately. If the signal operates to white again, follow the procedure outlined in *f* below.

f. Remove the wire from the binding posts. Reverse the conductors and reconnect them to the binding posts. Check the signal on the front of the line pack again.

Caution: **The remote control radio circuits must be correctly terminated on the switchboard to prevent the radio from operating continuously.**

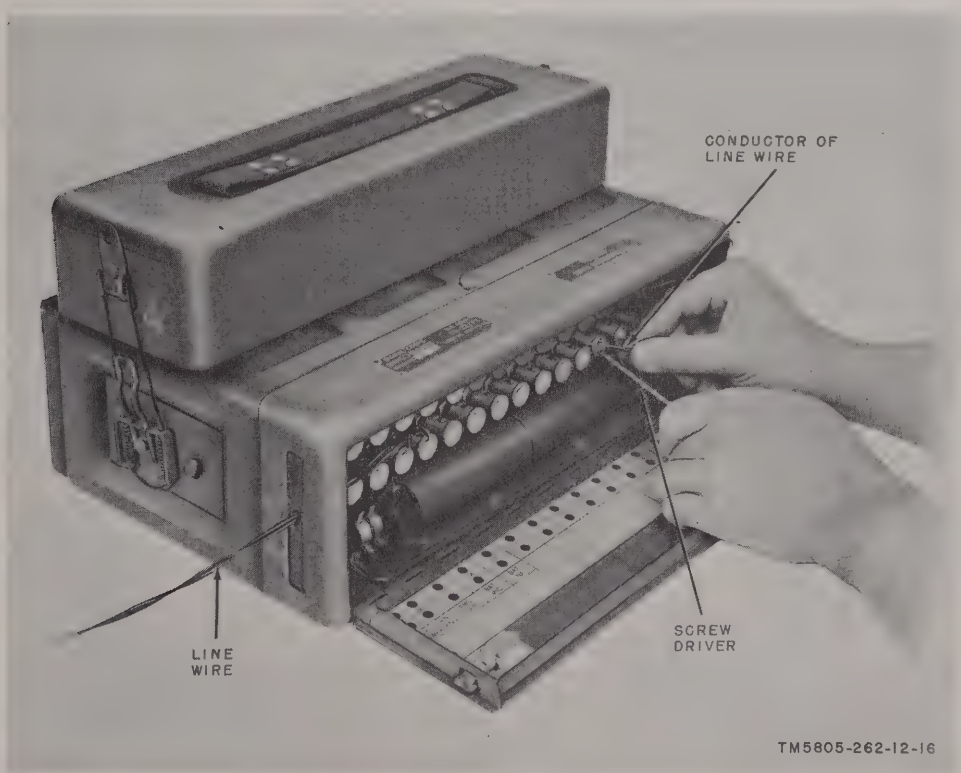


Figure 16. Terminating line wire in switchboard.

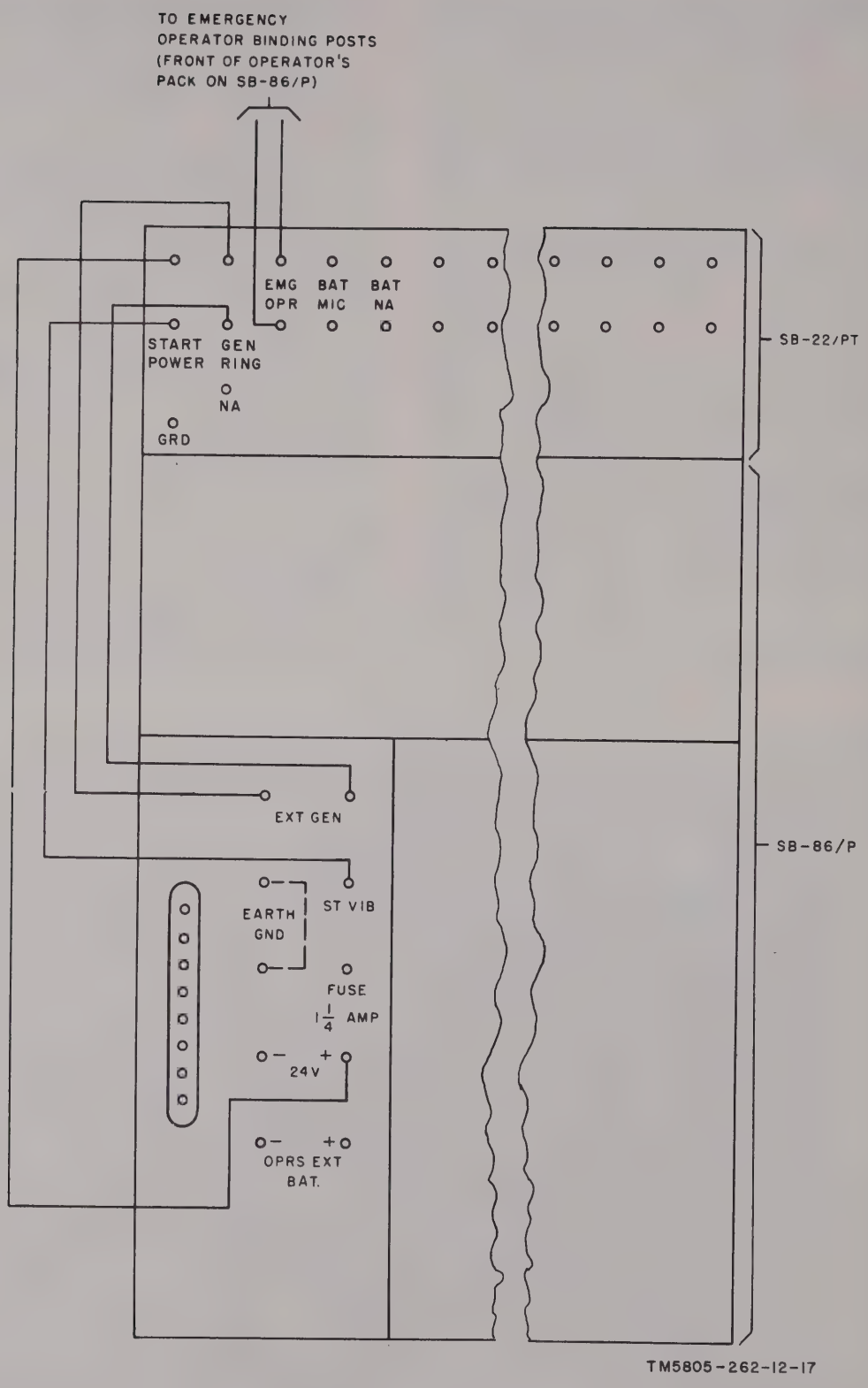


Figure 17. Connection diagram for SB–22(*)/PT and SB–86/P for operation with push-to-talk radio circuits.

20. Connection for Teletypewriter Operation

a. Additional Line Packs. If more than 11 vf teletypewriter circuits are required, remove the operator's pack from the switchboard (para 15*c*) and install five line packs in its place as outlined in paragraph 15*d*.

b. Connection of Lines and Trunks.

(1) Connect each teletypewriter line to a separate pair of binding posts at the rear of the switchboard (para 17).

(2) Record the line designation in the space provided for each line on the front of the line pack and on the inside of the rear cover of the switchboard.

c. Connection of Telegraph Terminal TH–5/TG and Teletypewriter Set AN/PGC–1. The TH–5/TG and the AN/PGC–1 are used by the operator to answer teletypewriter calls on the SB–22/PT. Follow the procedure outlined below to connect the TH–5/TG and the AN/PGC–1 to the switchboard:

(1) Connect a piece of WD–1/TT to the line binding posts of the highest numbered line pack (fig. 18).

(2) Connect the other end of the WD–1/TT to binding posts 4 and 6 (2W) on Telegraph Terminal TH–5/TG. Refer to TM 11–5805–246–10 for additional information concerning the TH–5/TG.

(3) Connect the teletypewriter to the TH–5/TG as explained in TM 11–5815–206–12.

21. Connection and Checks of Power Ringing Equipment

a. Connection.

(1) Connect the *output* binding posts of the external source of ringing current (para 8*c*) to the GEN. POWER RING (16) binding posts at the rear of the switchboard.

(2) Connect the start leads of the external source of ringing current to the START POWER RING (17) binding posts at the rear of the switchboard, if they are required.

Caution: **Do not connect the output binding posts of the external source of ringing current to the START POWER RING binding posts.**

b. Checks.

(1) Turn on the external source of ringing current.

(2) Remove the plug of the operator's cord from the jack on the operator's pack and insert it into the jack of an idle line pack.

(3) Insert the plug on the cord of the idle line pack into the jack of the line pack with a field telephone connected.

(4) Operate the RING BACK-PWR RING FWD switch to PWR RING FWD. The ringer on the field telephone should sound.

(5) Remove the plugs from the jacks. Allow the cord of the line pack to be retracted and insert the plug of the operator's cord into the jack on the operator's pack.

22. Connection of Emergency Operator's Telephone Set

If the operator's telephone set is damaged so that it cannot be used, a field telephone may be used for emergency operation. Follow the procedure outlined below to connect the field telephone to the SB–22(*)/PT:

a. Disconnect the operator's telephone set from the operator's pack.

b. Secure the field telephone to the switchboard so that it is convenient to the operator.

c. Connect one end of a short piece of Wire WD–1/TT to the line binding posts on the field telephone.

d. Connect the other end of the WD–1/TT to

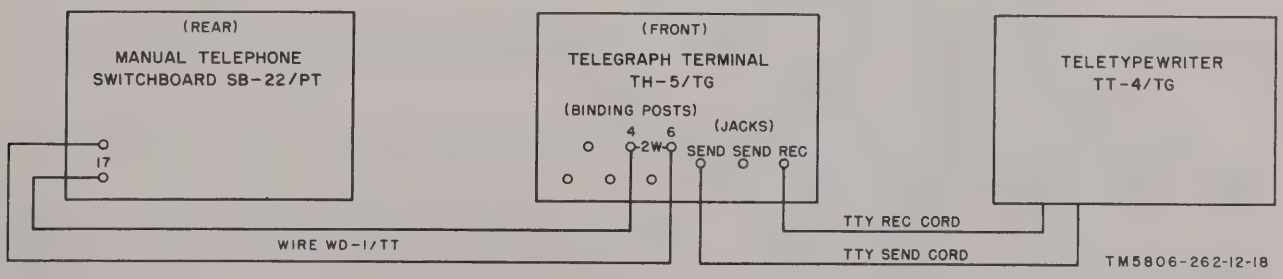


Figure 18. Connections for teletypewriter switching.

the EMG OPR binding posts at the rear of the switchboard.

23. Connection of Emergency Battery Supply

If Batteries BA–30 are not available, follow the procedure outlined below to provide the necessary direct current for the operation of the SB–22(*)/PT:

a. Connection of Batteries.

(1) Select four dry cell batteries, such as Battery BA–23.

(2) Connect two of the batteries in series to provide 3 volts.

Caution: **Do not connect more than 3 volts to the SB–22(*)/PT.**

(3) Connect the other two batteries in series to provide another 3-volt battery.

b. Connecting Batteries to Switchboard.

(1) Disconnect the wires from the BAT. NA and the BAT. MIC. binding posts at the rear of the SB–22(*)/PT.

(2) Connect one of the 3-volt batteries *(a* above) to the BAT. MIC. binding posts.

(3) Connect the other 3-volt battery *(a* above) to the BAT. NA binding posts.

CHAPTER 3

OPERATING INSTRUCTIONS

Section I. OPERATION UNDER USUAL CONDITIONS

24. Controls and Indicators

a. Operator's Pack (fig. 4).

Control	Function	
	Switch position	
Ringing switch..	RING BACK	Connects ringing current to the calling party's line.
	PWR RING FWD	Connects ringing current to the called party's line when an external source of ringing current is used.
Night alarm and light switch.	NA-IN	Permits the lamp to be used as a silent alarm.
	LITE-OUT	Lights the lamp to illuminate the switchboard.
Visual and audible alarm switch.	OFF	Disconnects the alarm circuit.
	VIS	Connects the lamp to the alarm circuit.
	AUD	Connects a buzzer to the alarm circuit.
Operator's cord and plug.	Connects the operator's circuit to the line or trunk pack.	
Operator's jack..	Disconnects the operator's telephone set battery when the operator's cord plug is inserted.	
Generator handwheel.	Provides ringing current when turned.	
Operator's telephone set receptacle.	Permits connection of the operator's telephone set to the operator's pack.	

b. Line and Trunk Packs (fig. 5).

Control	Function
Jack (one for each line and trunk pack).	Provides access to the line or trunk.
Cord plug (one for each line or trunk pack).	Permits interconnection of lines or trunks through the jacks.
Signal (one for each line or trunk pack).	Indicates the circuit requires attention when operated to the *white* position.

25. Preliminary Operating Procedures

a. Put on the operator's telephone set and connect it to the switchboard as explained below:

(1) Place the headband (fig. 7) over your head so the receiver covers one ear.

(2) Position the transmitter directly in front of your mouth. *Do not attempt to move the boom between the transmitter and the receiver.* Move the clamping ring around the receiver to position the transmitter.

(3) Align the connector on the operator's telephone set cord wth the receptacle on the operator's pack. Push in on the connector and turn it to the right to lock it in place.

Note. The spacing of the lugs around the inside of the connector determines the position of the connector.

(4) Clip the push-to-talk switch to the front of your shirt.

b. If the operator must leave the switchboard, operate the visual and audible alarm switch (fig. 4) to VIS or AUD.

(1) Operate the night alarm switch to VIS when a silent alarm is required.

(2) Operate the night alarm switch to AUD when an audible alarm is required.

(3) Operate the visual and audible alarm switch to OFF when an alarm is not required.

c. If the switchboard is being operated in darkness, pull out on the lamp cap to turn the lamp on.

The illuminating lamp cannot be used for the night alarm and to light the switchboard at the same time.

d. Insert the plug of the operator's cord into the operator's jack on the operator's pack (fig. 4).

e. Operate the push-to-talk switch and lock it in position as shown in C, figure 19.

26. Connecting Local Calls

Caution: **Be very careful to prevent the cords and plugs from coming in contact with the ground when operating the switchboard. Carefully wipe the cord and plug with a clean dry cloth if they accidentally drop onto the ground.**

a. Answering Calling Party. Watch the signals on the front of the line packs. When the calling party signals the switchboard, the line signals turn from *black* to *white*. Follow the procedure outlined below to answer the incoming call (A, fig. 20).

(1) Remove the plug of the operator's cord from the operator's jack and insert it into the jack associated with the white line signal.

(2) Obtain the called party's name or number from the calling party. Use standard operating procedure.

b. Connecting Calling Party to Called Party (B, fig. 20).

(1) Pull out the cord on the *calling* party's line pack.

(2) Insert the *calling* party's plug into the *called* party's line jack.

c. Signaling Called Party (C, fig. 20).

(1) Turn the hand ringing generator rapidly approximately 10 turns. *Do not operate the RING BACK-PWR RING FWD switch to either position.*

(2) Wait for the called party to answer. After the called party answers, remove the operator's plug from the called party's jack and insert it into the operator's jack.

d. Challenging Ring-Off Signal. When the calling and called parties finish talking, both parties should ring off. The ring-off signal will cause the *calling* party's line signal to operate to *white*. Follow the procedure outlined below to challenge a line:

(1) Remove the operator's plug from the op-

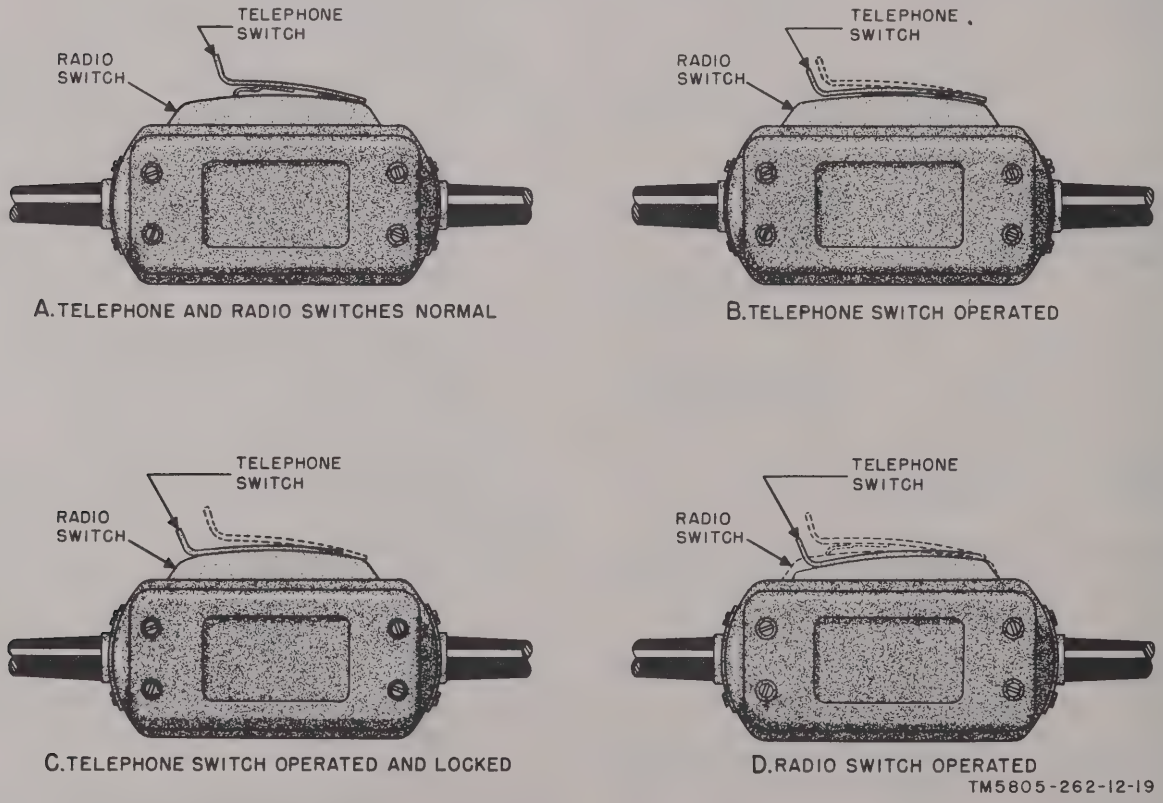
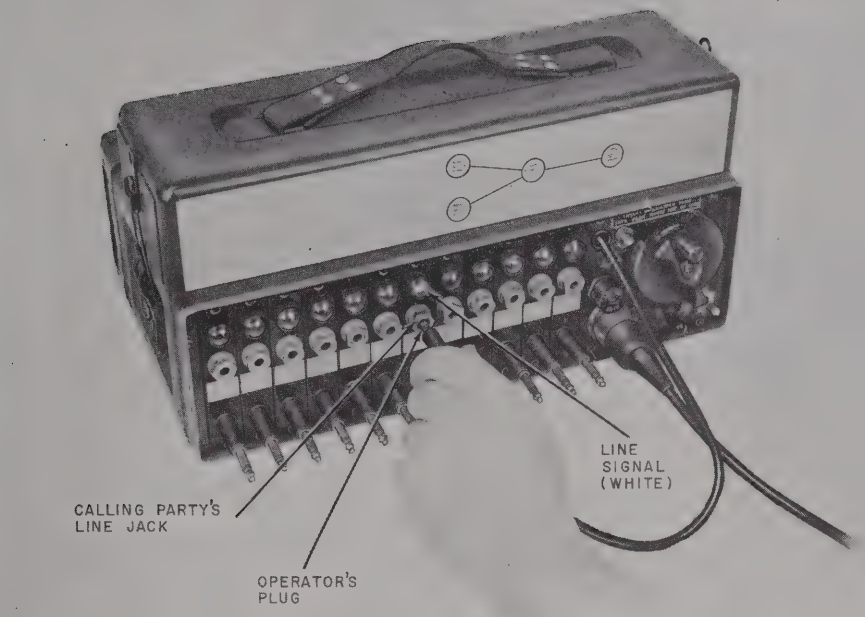
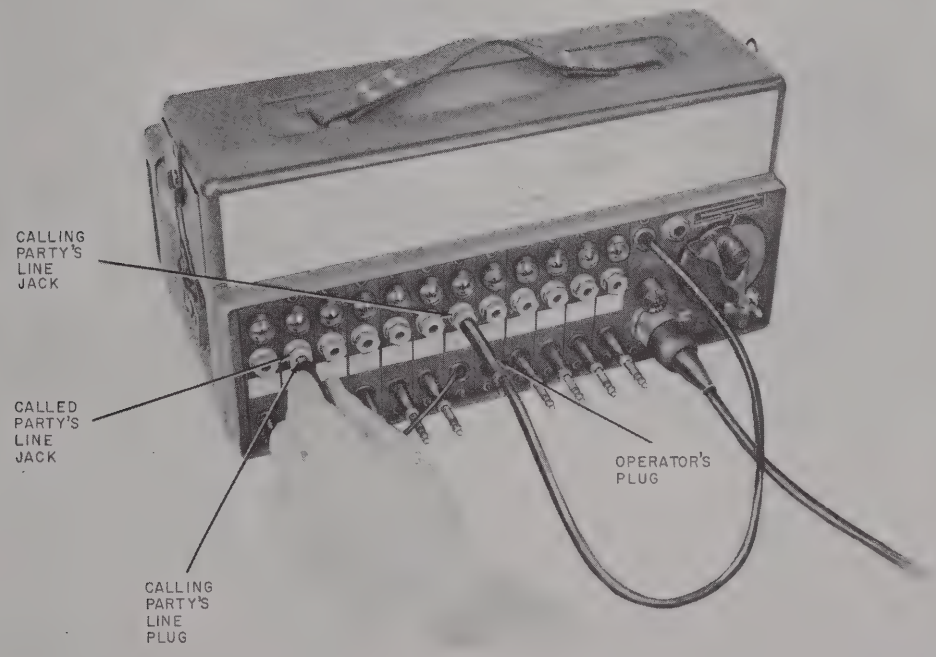


Figure 19. Operating positions of push-to-talk switch.



A. ANSWERING INCOMING CALL.



B. CONNECTING CALLING PARTY
TO CALLED PARTY.

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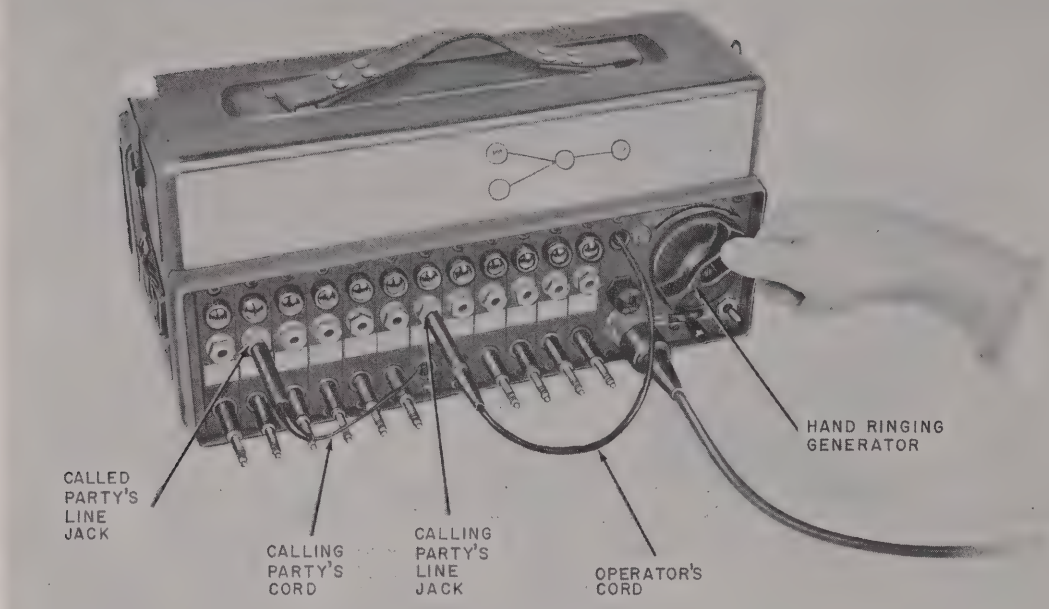
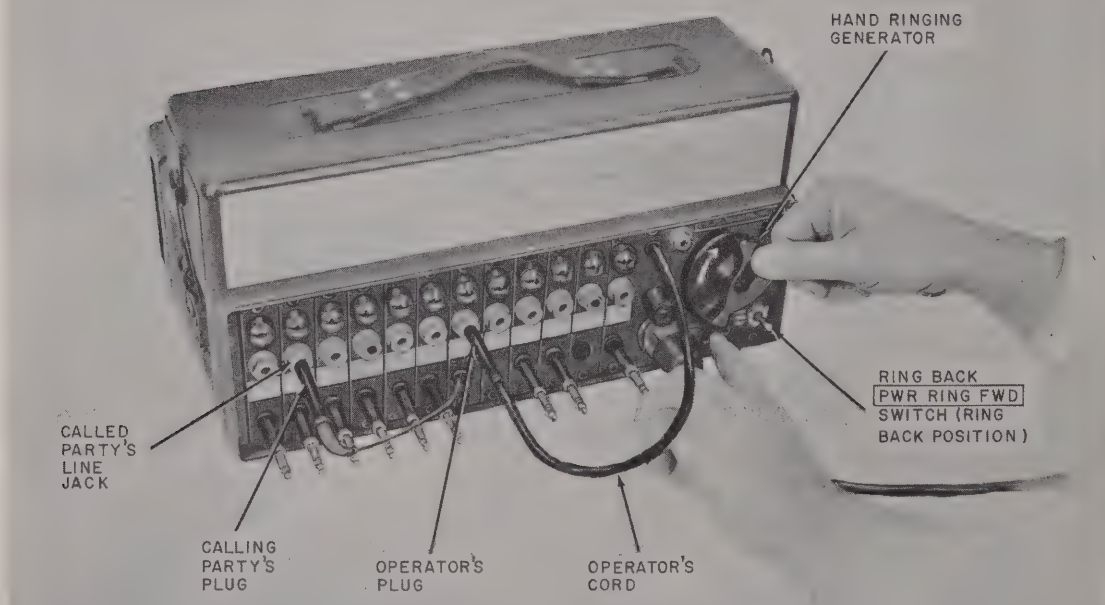
Figure 20 (1). Steps required to connect local call through SB–22(*)/PT(part 1 of 2).



C. SIGNALING CALLED PARTY.



D. RINGING BACK CALLING PARTY.

TM 5805-262-12-20 (2)

Figure 20 (2). Steps required to connect local call through SB–22(*)/PT (part 2 of 2).

erator's jack and insert it into the calling party's jack.

(2) Ask the parties if they have finished.

(3) If no answer is heard, disconnect the circuit.

(4) Remove the operator's plug from the calling party's jack and insert it into the operator's jack.

27. Connecting Outgoing Trunk Calls

a. Answering Calling Party.

(1) Remove the operator's cord from the operator's jack and insert it into the jack associated with the line signal that has turned *white.*

(2) Obtain the name or number of the called party. Use standard operating procedure.

b. Passing Number to Distant Operator (Via Line Pack). When the calling party wants to talk to a party connected to another switchboard, use the following procedure to pass the number to the distant operator:

(1) Pull out the cord on the calling party's line pack.

(2) Insert the calling party's plug into the jack of the trunk to the distant switchboard.

(3) Turn the hand ringing generator to signal the distant operator. Do *not* operate the RING BACK-PWR RING FWD switch to either position.

(4) Pass the name or number of the desired party to the distant operator when the distant operator answers.

(5) Be sure the distant operator received the correct number; then remove the operator's plug from the line jack and insert it into the operator's jack.

c. Disconnecting Trunk Call (Via Line Pack). Follow the procedure outlined below when the calling party's line signal turns white:

(1) Remove the operator's plug from the operator's jack and insert it into the calling party's line jack.

(2) Ask the parties if they have finished.

(3) Turn the hand ringing generator to signal the distant operator. Do not wait for the distant operator to answer. Remove the plug from the trunk jack and let it retract into its line pack.

(4) Remove the operator's cord from the line jack and insert it into the operator's jack.

d. Connecting and Disconnecting Trunk Calls (Via Trunk Pack).

(1) Connect the outgoing trunk call as explained in *b* above, but do *not* operate the hand ringing generator to signal the distant operator.

(2) Disconnect the trunk call as explained in *c* above, but do *not* operate the hand ringing generator to signal the distant operator.

Caution: **Equipment at the distant end of the trunk circuit may be damaged if the hand ringing generator is operated.**

28. Connecting Incoming Trunk Calls

a. Answering Incoming Trunk Calls.

(1) Remove the operator's plug from the operator's jack, and insert it into the jack associated with the white trunk signal.

(2) Obtain the name or number of the desired party.

b. Connecting Trunk to Called Party.

(1) Pull out the cord on the trunk line pack and insert it into the called party's line jack.

(2) Turn the hand ringing generator to signal the called party.

(3) Wait for the called party to answer. After the called party answers, remove the operator's cord from the trunk jack and insert it into the operator's jack.

c. Signaling Calling Party with Ring Back. If the calling party disconnects before the called party answers, follow the procedure outlined below to signal the distant operator:

(1) Remove the operator's plug from the operator's jack and insert it into the jack associated with the trunk circuit.

(2) Operate the RING BACK-PWR RING FWD switch to RING BACK.

Note. If the call is connected through the trunk pack, *do not* operate the RING BACK-PWR RING FWD switch.

(3) When the distant operator answers, tell the distant operator the name or number of the party that disconnected. The distant operator will signal the party connected to the distant switchboard.

(4) Wait for the conversation to start; then remove the operator's plug from the trunk jack and insert it into the operator's jack.

d. Disconnecting Incoming Trunk Call. Follow the procedure outlined below when the trunk signal turns white:

(1) Remove the operator's plug from the operator's jack and insert it into the trunk jack.
(2) Ask the parties if they have finished.
(3) Operate the RING BACK-PWR RING FWD switch to RING BACK, and turn the hand ringing generator to signal the distant operator. Do not wait for the distant operator to answer.

Note. If the call is connected through the trunk pack, *do not* operate the RING BACK-PWR RING FWD switch.

(4) Remove the plug from the called party's jack and let it retract into its line pack. Remove the operator's cord from the trunk jack and insert it into the operator's jack.

29. Recall Procedure, Local Calls

If the calling party fails to reach the called party or if the call is disconnected before the conversation is completed, follow the procedures given below to reconnect the calling and called parties when the call is completed through line packs.

a. Signaling Calling Party with Ring Back. If the calling party disconnects before the called party answers, follow the procedure outlined below to signal the calling party (D, fig. 20).

(1) Remove the plug of the operator's cord from the operator's jack on the operator's pack and insert it into the calling party's jack.
(2) Operate the RING BACK-PWR RING FWD switch to RING BACK.
(3) Turn the hand ringing generator rapidly approximately 10 turns.
(4) Remove the operator's plug from the calling party's jack and insert it into the operator's jack when both parties answer.

b. Signaling Called Party. If the called party disconnects before the conversation is completed, follow the procedure given below to recall the called party:

(1) Remove the plug of the operator's cord from the operator's jack on the operator's pack and insert it into the jack of the calling party's line pack.
(2) Operate the hand ringing generator rapidly approximately 10 turns.
(3) Remove the plug of the operator's cord from the jack on the calling party's line pack and insert it into the operator's jack on the operator's pack after both parties have answered.

30. Recall Procedures, Trunk Calls

a. Line Pack. Recall procedures for trunk calls through line packs are the same as the recall procedures for local calls (para 29) except that the operator at the distant switchboard must signal the distant party.

b. Trunk Pack. If recall is necessary on a call completed through a trunk pack, the call must be disconnected and reconnected as explained in paragraphs 27 and 28.

31. Connecting Conference Calls

a. Request for Conference Call. When the operator answers a call, the party will tell the operator that a conference call is required. Follow the procedure outlined below to determine who is to be called:

(1) Ask the calling party who is to be included in the conference.
(2) Write down each party's name and number.
(3) Inform the calling party that he will be called as soon as all of the parties are on the line.

b. Signaling Called Parties. Follow the procedure outlined below to signal each of the parties that is to be included in the conference:

(1) Insert the operator's plug into the line jack of the first party.
(2) Operate the RING BACK-PWR RING FWD switch to RING BACK, and turn the hand ringing generator.
(3) Tell the called party to stand by for a conference call.
(4) Remove the operator's plug from the line jack and insert the plug of the party requesting the conference call into the line jack.
(5) Insert the operator's plug into the line jack of the second party.
(6) Operate the RING BACK-PWR RING FWD switch to RING BACK. Inform the second party to stand by for a conference call.
(7) Remove the operator's plug from the line jack and insert the plug of the first party into the line jack.
(8) Repeat the procedure described in (1) through (7) above for all other parties to be included in the conference call.
(9) Insert the operator's cord into the line jack of the party requesting the conference call.

(10) Operate the RING BACK-PWR RING FWD switch to RING BACK, and turn the hand ringing generator. Inform the party that all the parties concerned with the conference are on the line.

(11) Remove the operator's plug from the line jack and insert it into the operator's jack.

c. Disconnecting Conference Call. Follow the procedure outlined below when disconnecting a conference call:

(1) When the parties have finished, each party will ring off and the signal on the calling party's line pack will turn white.

(2) Remove the operator's plug from the operator's jack and insert it into the calling party's line jack. Ask the parties if they have finished.

(3) If no answer is received, remove the plugs from the jacks and allow them to be retracted into their respective line packs. Remove the operator's plug from the line jack and insert it into the operator's jack.

32. Connecting Teletypewriter Calls (Teletypewriter Operation)

a. Answering Incoming Calls. Watch the signals on the front of the line pack. When one of the signals turns *white,* follow the procedure outlined below to answer the call:

(1) Insert the plug of the line pack being used as the operator's pack into the jack associated with the *white* line signal.

(2) Use the teletypewriter to obtain the called party's name or number. Use standard teletypewriter operating procedure.

b. Connecting Called Party to Calling Party.

(1) Remove the plug of the operator's line pack from the calling party's line jack and insert it into the called party's line jack.

(2) Operate the RING switch on the TH–5/TG to RING.

(3) Wait for the called party to answer the incoming call. If the called party does not answer within 30 seconds, operate the FIGS key and the BELL key on the operator's teletypewriter.

(4) Inform the called party to stand by for a message.

(5) Pull out the cord on the called party's line pack and insert the plug into the line jack of the calling party. Instruct both parties to go ahead.

(6) Be sure the parties are connected, and then remove the plug of the operator's line pack from the line jack and let it retract into the operator's line pack.

c. Disconnecting Teletypewriter Calls. When the parties have finished, they will ring off by operating the RING switch on the TH–5/TG to RING, causing the line signal on the called party's line pack to operate to white. Follow the procedure outlined below to disconnect the call when the ring-off signal is received:

(1) Insert the operator's plug into the called party's line jack.

(2) Use the teletypewriter to ask the parties if they have finished. Wait for the parties to answer.

(3) If no answer is received, remove the called party's plug from the calling party's jack and let it retract into its line pack. Remove the plug of the operator's line pack from the called party's jack and let it retract into the operator's line pack.

33. Connecting Teletypewriter Calls (Telephone Operation)

Teletypewriter circuits connected to the SB–22(*)/PT can be interconnected without using a teletypewriter set as an operator's set. When this type of operation is used, the calling party will request the number by voice (telephone). After the connection has been completed, the calling party will proceed with teletypewriter operation. Refer to paragraph 26 for telephone connecting procedure.

34. Connecting Push-to-Talk Radio with SB–22(*)/PT and SB–86/P

a. Outgoing Calls. Follow the procedure given below when a party connected to the SB–86/P has been answered and requires the use of a push-to-talk radio circuit.

(1) Inform the calling party that a push-to-talk radio circuit is being used.

(2) Remove the answering cord from the calling party's jack (SB–86/P).

(3) Insert the plug of the line pack cord (SB–22(*)/PT) connected to the push-to-talk radio circuit.

(4) Insert the plug of the operator's cord (SB–22(*)/PT) into the jack of the line pack being used.

(5) Push the RING BACK-PWR RING FWD switch to RING BACK.

(6) Remove the plug of the operator's cord from the jack of the line pack (SB–22(*)/PT) when the radio wire integration equipment operator answers.

(7) When the calling and called parties have finished talking they will ring off, and the signal associated with the cord (SB–22(*)/PT) will operate to *white*. Insert the plug of the operator's cord into the jack of the line pack (SB–22(*)/PT) and challenge the circuit.

(8) Disconnect the line pack cord and the operator's cord, if both parties have disconnected.

b. Incoming Calls. Use the following procedure to extend calls received from push-to-talk radio circuits connected to the SB–22(*)/PT.

(1) Insert the plug of the operator's cord into the jack associated with the signal indicating an incoming call from a push-to-talk radio circuit.

(2) Answer the incoming call.

(3) Insert the plug of the cord associated with the incoming signal (SB–22(*)/PT) into the called party's jack (SB–86/P).

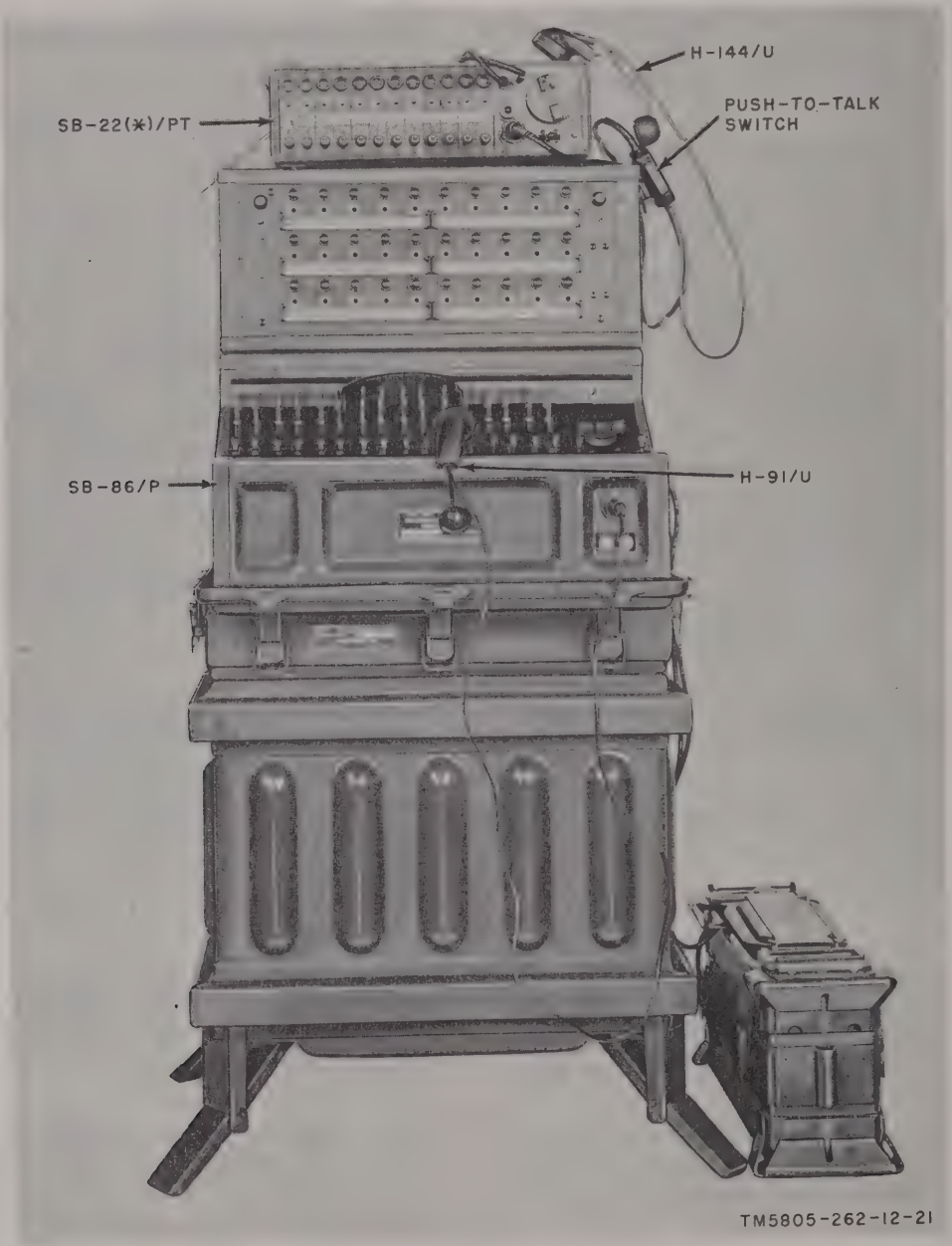


Figure 21. Operation of SB–22(*)/PT and SB–86/P.

(4) Operate the RING BACK-PWR RING FWD switch to PWR RING FWD (SB–22(*)/PT).

(5) Inform the called party that a push-to-talk radio circuit is being used.

(6) When the conversation is finished, both parties will ring off, and the signal associated with the cord being used will operate to *white*. Disconnect the call after challenging the circuit.

Section II. OPERATION UNDER UNUSUAL CONDITIONS

35. General

Operation of Switchboard, Telephone, Manual SB–22(*)/PT may be difficult in regions where extreme cold, heat, moisture, and adverse weather conditions prevail. Procedures for minimizing these effects are given below.

a. Operation in Extremely Cold Climates. Keep the equipment warm and dry. Do not bend the cords sharply and do not release the cords so that they retract rapidly and cause the plug to strike the front of the line packs.

b. Operation in Warm, Damp Climates. Keep the equipment as dry as possible. Wipe the equipment with a clean, dry, lint-free cloth to prevent moisture from accumulating.

c. Operation in Hot, Dry Climates. Protect the equipment from sand and dust. Make frequent preventive maintenance checks. Keep the equipment clean.

36. Operation Using Field Telephone for Operator's Telephone Set

To use a field telephone as the operator's telephone set, be sure it is connected to the switchboard as explained in paragraph 25. Operate the switchboard as explained in paragraphs 26 through 34; use the handset of the field telephone instead of the operator's telephone set. Follow the procedure outlined below when operating the switchboard with the field telephone.

a. Hold the receiver against the ear with the transmitter positioned in front of the lips.

b. Depress the push-to-talk switch on the side of the handset handle to talk to the calling or called party.

37. Operation Using External Source of Ringing Current

To operate the switchboard with external ringing current, check with the installers to be sure that the ringing equipment is connected to the switchboard (para 21). Operate the switchboard as explained in paragraphs 24 through 34, except for the hand ringing generator. Operate the RING BACK-PWR RING FWD switch to PWR RING FWD to signal the called party; operate it to RING BACK to signal the calling party. *Do not operate the hand ringing generator at any time.*

CHAPTER 4

MAINTENANCE INSTRUCTIONS

Section I. OPERATOR'S MAINTENANCE

38. Scope of Operator's Maintenance

a. The following is a list of maintenance duties normally performed by the operator of the SB–22(*)/PT. These procedures do not require special tools or test equipment.

b. Operator's maintenance consists of the following:

(1) Preventive maintenance (para 39).
(2) Visual inspection (para 40).

39. Preventive Maintenance
(fig. 22 and 23)

a. DA Form 11–246. DA Form 11–246, items 1 through 9, is the preventive maintenance checklist to be used by the operator. References in the ITEM block in the figures are to paragraphs that contain additional information pertinent to the particular item. Follow the instructions on the form.

Item	Maintenance procedure
1	Wipe the exterior of the switchboard case, the front of the line packs and operator's pack, the cords and plugs, and the operator's headset with a dry lint-free cloth.
4	Pull out each cord to its maximum length and allow it to return slowly. See that each cord returns fully.

b. Items. The information in this subparagraph is supplementary to DA Form 11–246. The item numbers correspond to the ITEM numbers on the form.

40. Visual Inspection

a. When the switchboard fails to operate properly, perform the following visual checks before calling the organizational repairman.

(1) See that all switches are operated to the proper position.
(2) Check the operator's telephone set connector to be sure it is properly connected to the operator's pack. Reconnect it if necessary.
(3) Check the line terminals at the rear of the switchboard to be sure that all of the lines are properly terminated.
(4) Check the operator's telephone set for damaged cords, transmitter, or receiver. Replace the telephone set if it is defective.
(5) Check to be sure the batteries are properly installed.
(6) Check to see that the spring contacts have not been damaged.

b. If the above checks do not locate the trouble or the trouble cannot be corrected, inform the organizational maintenance personnel.

Section II. ORGANIZATIONAL MAINTENANCE

41. Scope of Organizational Maintenance

This section covers second echelon maintenance of Switchboards, Telephone, Manual SB–22(*)/PT and SB–22A/PT. Second echelon maintenance for the switchboards consists of the following:

a. Replacement of batteries (para 46).
b. Replacement of lamp (para 47).
c. Replacement of operator's pack (para 48).
d. Replacement of line packs (para 49).
e. Repair of operator's telephone set (para 50).

42. Tools, Materials, and Test Equipment

The tools, materials, and test equipment required to perform second echelon maintenance are listed below:

a. Tools and Test Equipment.

(1) Tool Equipment TE–33.
(2) Screwdriver TL–21.
(3) Test Set TS–190/U.

b. Materials.

(1) Lint-free cloth.
(2) Cleaning Compound (Federal stock No. 7930–395–9542).

Warning: **Cleaning compound is flammable and its fumes are toxic. Do not**

MAINTENANCE CHECK LIST FOR SIGNAL EQUIPMENT
TELEPHONE SWITCHBOARD - FIELD
(AR 750-625)

EQUIPMENT NOMENCLATURE

SWITCHBOARD, TELEPHONE, MANUAL SB-22/PT

EQUIPMENT SERIAL NUMBER

923

INSTRUCTIONS

This form may be used for a period of one month by using the correct dates and weeks of the month. It is to be used as a Preventive Maintenance check list for Signal equipment in actual use, or for a check on equipment prior to issue.

1. For detailed Preventive Maintenance instructions see:
   a. The Technical Manual *(in TM 11 series)* for the equipment. *(See DA Pamphlet Number 310-4)*
   b. The Supply Bulletin *(SB 11-100 series)* for the equipment. *(See DA Pamphlet Number 310-4)*
   c. The Department of the Army Lubrication Order. *(See DA Pamphlet Number 310-4)*

2. The following action will be taken by either the Communications Officer/ Chief for 1st echelon, or the Inspector for higher echelon:
   a. Enter Equipment Nomenclature and Serial Number.
   b. Strike out items that do not apply to the equipment.

3. Operator/Inspector will enter in the columns entitled CONDITION, on the proper line, a notation regarding the condition, using symbols specified under LEGEND.

4. After operator completes each daily inspection he will initial over the appropriate dates under "Daily Condition for Month", then return form to his supervisor.

FOLD

TYPE OF INSPECTION

OPER-ATOR	2/3 ECH-ELON	DATE	SIGNATURE
V		5 SEP 60	J Ruel
	V	30 SEP 60	R J agnes

U. S. GOVERNMENT PRINTING OFFICE 1957 O—427035

4

DA FORM 1 MAY 57 11-246

REPLACES DA FORMS 11-246, 1 OCT 55 AND 11-247, 1 NOV 55, WHICH ARE OBSOLETE.

Figure 22. DA Form 11–246, pages 1 and 4.

LEGEND for marking conditions:
Satisfactory, ✓.
Adjustment, Repair or Replacement required, X.
Defect corrected, (X).

DAILY CONDITION FOR MONTH OF

NO.	DAILY ITEM	1 JR	2 JR	3 JR	4 JR	5 JR	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	2D 3D ECH-ELON
1.	CLEAN DIRT AND MOISTURE FROM EXPOSED SURFACES OF CASES, HOUSINGS, JACK PANELS, HEADSETS, CORDS AND CABLES. PARA. 39b	✓	✓	✓	✓	✓												✓	✓	✓	✓	✓											✓
2.	INSPECT GROUND RODS FOR LOOSE OR CORRODED CONNECTIONS AND FIRM EMBEDDING.	✓	✓	✓	✓	✓												✓	✓	✓	✓	✓											✓
3.	DURING OPERATION BE ALERT FOR ANY UNUSUAL PERFORMANCE OR CONDITION.	✓	✓	✓	✓	✓												✓	✓	✓	✓	✓											✓
4.	CHECK CORD REELS FOR FULL RETRACTION OF CORDS. PARA 39b	✓	✓	✓	✓	✓												✓	✓	✓	✓	✓											✓

WEEKLY	CONDITION EACH WEEK 1ST	2D	3D	4TH	5TH	2D 3D ECH
5. CLEAN DIRT AND MOISTURE FROM ALL EXTERNAL ELECTRICAL CONNECTIONS, TERMINALS AND BINDING POSTS. CHECK THE SPRING ACTION OF BINDING POSTS NOT IN USE.	✓					✓
6. INSPECT SWITCHBOARD AND HEADSET CORDS FOR WORN AND FRAYED JACKETING AND LOOSE PLUGS. INSPECT THE PLUGS FOR CHIPPED OR CRACKED INSULATORS AND TARNISH	✓					✓
7. INSPECT KEYS AND SWITCHES FOR FREE MOVEMENT AND POSITIVE ACTION.	✓					✓
8. INSPECT FOR DAMAGED HANDLES, LATCHES AND FASTENERS.	✓					(X)
9. INSPECT BATTERY COMPARTMENT FOR ELECTROLYTE LEAKAGE, AND CORRODED BATTERY CLIPS OR SPRINGS.	✓	\				✓

ADDITIONAL ITEMS FOR 2D AND 3D ECHELON INSPECTIONS	CONDITION
10. CLEAN INTERIOR OF SWITCHBOARD CASES AND UNITS OF DIRT, FUNGUS AND MOISTURE. CLEAN AND TIGHTEN CONTACTS.	✓
11. INSPECT SWITCHBOARD UNITS FOR DAMAGED OR BENT CASES, LATCHES AND FASTENERS.	X
12. CLEAN BATTERY COMPARTMENT OF ELECTROLYTE LEAKAGE AND CORROSION. INSPECT BATTERY CLIPS AND CONTACT SPRINGS FOR CORROSION AND LOOSE OR CORRODED CONNECTIONS.	✓
13. TIGHTEN ANY LOOSE ASSEMBLY AND MOUNTING SCREWS.	✓
14. REMOVE ALL BATTERIES BEFORE STORING OR SHIPPING EQUIPMENT.	✓

IF DEFICIENCIES NOTED ARE NOT CORRECTED DURING THE INSPECTION, INDICATE ACTION TAKEN FOR CORRECTION. *(Continue on page 4, if more space is needed)*

RECESSED LATCH ON REAR COVER BROKEN. REPORTED TO 3D ECHELON MAINTENANCE FOR REPLACEMENT.

2 3

TM5805-262-12-23

Figure 23. DA Form 11–246, pages 2 and 3.

use it near fire nor flame; provide adequate ventilation.

43. Preventive Maintenance

Items 1 through 14 on DA Form 11–246 (fig. 22 and 23) is a preventive maintenance checklist to be used by organizational maintenance personnel. Follow the instructions on the form.

44. Visual Inspection

When the operator reports trouble with the switchboard, the repairman should check as many of the items listed in *a* and *b* below as required, before starting an operational check. Do not remove the component from the switchboard without knowing the operational symptom.

a. Operator Cannot Hear or be Heard On Any Line.

(1) Check the operator's telephone set cord for cuts or breaks deep enough to break one of the conductors.

(2) Check the transmitter and receiver on the operator's telephone set to be sure they have not been damaged.

(3) Check the push-to-talk switch to be sure that it has not been damaged. Be sure the push-to-talk switch is operated to the proper position.

(4) Check the operator's telephone set connector for damage. Be sure it mates properly with the receptacles on the operator's pack.

(5) Check the operator's cord for cuts or breaks deep enough to break one of the conductors.

(6) Check the plug on the operator's cord for damage.

b. Operator Cannot Hear or be Heard On Particular Line

(1) Check the line jack on the line pack for damage.

(2) Check the cord and plug on the line pack for damage.

(3) Check the binding posts on the rear of the switchboard. Be sure the line wire is securely held by the binding posts.

45. Equipment Performance Checklist

The equipment performance checklist is used to systematically check equipment performance during a bench test, with a field telephone set connected to one of the line packs. All corrective measures which the operator or organizational repairman can perform are given in the *Corrective measures* column. If the action taken does not correct the fault, additional maintenance is required by higher echelon personnel. The organizational repairman should note on a repair tag how the equipment performed and what corrective measures were taken. In using the checklist, start at the beginning, and follow each step consecutively to locate the trouble. However, if trouble is suspected in a particular area, start checking at that point and continue the steps in sequence. Operate the equipment as shown in the checklist below.

	Item No.	Item	Action or condition	Normal indication	Corrective measures
PREPARATORY	1	Battery case	Install Batteries BA–30 in battery case.		
	2	Line wires	Connect line wires to binding posts in rear of switchboard.		
START	3	Operator's telephone set.	Connect operator's telephone set to operator's pack and operate push-to-talk switch.		
	4	Operator's plug.	Remove operator's plug from operator's jack.	Sidetone should be heard in receiver of operator's telephone set.	Check the spring contacts on the battery case for bends or damage.

	Item No.	Item	Action or condition	Normal indication	Corrective measures
					Check battery installation or replace batteries. Replace operator's telephone set. Replace operator's pack, if available. Connect emergency operator's telephone set.
	5	Night alarm switch.	Operate night alarm switch to VIS or AUD.		
EQUIPMENT PERFORMANCE	6	Hand ringing generator.	Insert the operator's plug into an unused line jack and insert the plug of line pack cord into the line jack of the line pack with a field telephone connected. Turn the generator and wheel.	Telephone should be signaled.	Replace operator's pack. Connect an external source of ringing current.
	7	Line signals ..... Perform this test on each line pack.	Signal party and request party to signal switchboard.	Line signal should operate to white; night alarm buzzer should sound or lamp should light.	Replace line pack.
				Line signal should operate to black; night alarm buzzer should be silenced or lamp should go out.	Replace line pack.
EQUIPMENT PERFORMANCE	8	Operator's pack.	Insert the plug of the operator's cord into the jack of the line pack with a field telephone connected. Operate the ringing switch to RING BACK and turn the generator hand wheel.	The field telephone should be signaled.	Replace operator's pack.
			Talk to party	Operator and party should both hear.	Replace operator's pack.
EQUIPMENT PERFORMANCE	9	Lamp	Pull out LITE-OUT–NA-IN knob.	Lamp should light	Replace batteries. Replace lamp.
STOP	10	Operator's cord	Insert the operator's plug into jack on the operator's pack.	Sidetone should stop	Replace operator's pack.

46. Replacement of Batteries

a. Removal of Wornout Batteries.

(1) Remove the battery case from the rear of the switchboard.

(2) Unscrew the end cap from each end of the battery case and remove the batteries from the case.

b. Installing New Batteries. Install new batteries as explained in paragraph 13*a*.

47. Replacement of Lamp

a. Removal of Lamp.

(1) Pull the LITE-OUT–NA-IN knob to the LITE-OUT position.

(2) Turn the knob counterclockwise to unscrew it from the mounting.

Caution: **Do not use any tools to remove the knob from the switchboard.**

(3) Push in on the lamp and turn it about one-fourth turn counterclockwise. Slide the lamp out of the lampholder.

b. Installation of New Lamp.

(1) Slide a lamp known to be in good condition into the lampholder. Be sure to align the lugs on the lamp with the grooves in the lampholder.

(2) Push the lamp in and turn it clockwise to lock it in the lampholder.

(3) Screw the LITE-OUT–NA-IN knob on the mounting. Tighten the knob finger-tight.

(4) Check the light to be sure it lights when the knob is pulled out, and goes out when the knob is pushed in.

48. Replacement of Operator's Pack

a. Removal of Operator's Pack.

(1) Remove the operator's pack from the switchboard case as explained in paragraph 15*c*.

(2) Inspect the inside of the switchboard case for damage that may prevent the new operator's pack from being installed.

b. Installation of New Operator's Pack.

(1) Connect the operator's telephone set to the receptacle on the front of the new operator's pack.

(2) Grasp the connector and slide the new operator's pack into the switchboard case.

Caution: **Do not force the operator's pack into the switchboard case.**

(3) Tighten the captive screws located at each corner of the operator's pack. Do not strip the screws.

(4) If a line pack was removed from the switchboard case to free the operator's pack, replace the line pack (para 49*b*).

49. Replacement of Line Pack

a. Removal of Line Pack.

(1) Unscrew the captive screw located at the top and bottom of the line pack.

(2) Insert the plug of the cord into the jack of the line pack.

(3) Grasp the plug and pull the line pack out of the switchboard case. Be sure to pull the line pack straight out of the switchboard case to prevent bending the plug or the jack.

(4) Remove the plug from the jack and mark the line pack with a tag. Write the trouble or suspected trouble on the tag.

b. Installation of New Line Pack.

(1) Select a line pack known to be in good condition. Insert the plug into the jack.

(2) Align the line pack with the space in the switchboard case. Be sure it is positioned correctly.

(3) Slide the new line pack into the switchboard case. Do not force the line pack into the switchboard case.

(4) Tighten the captive screw at the top and bottom of the line pack. Do not break or strip the screws.

50. Repair of Handset-Headset H–81A/U, H–144/U, and H–144A/U

(fig. 24)

a. Replacing Earphone Element.

(1) Carefully spring the headband clamping ring open and slide it off the rubber receiver housing.

(2) Carefully remove the earphone cover and gasket, cemented to the earphone cover, from the earphone housing.

(3) Slide the earphone out of the rubber housing and disconnect the leads.

(4) Connect the leads to the new earphone element and insert it into the earphone housing.

(5) Replace the gasket and earphone cover. Be sure the gasket is not kinked or bent under the earphone cover.

(6) Spring the headband clamping ring open and place it on the earphone housing.

Check to be sure the headband is positioned properly.

b. Replacing Microphone Element.

(1) Peel the rubber microphone element housing off the microphone element, microphone cover, and gasket. Be careful not to damage the housing.

(2) Remove the microphone cover and gasket from the microphone element.

(3) Remove the microphone element from the microphone cup.

(4) Place a new microphone element in the microphone cup.

(5) Place the microphone cover and gasket on the microphone element and hold them in position.

(6) Slide the rubber microphone element housing over the microphone element, microphone cover, and gasket. Be sure that the housing clamps the microphone element, microphone cover, and gasket firmly.

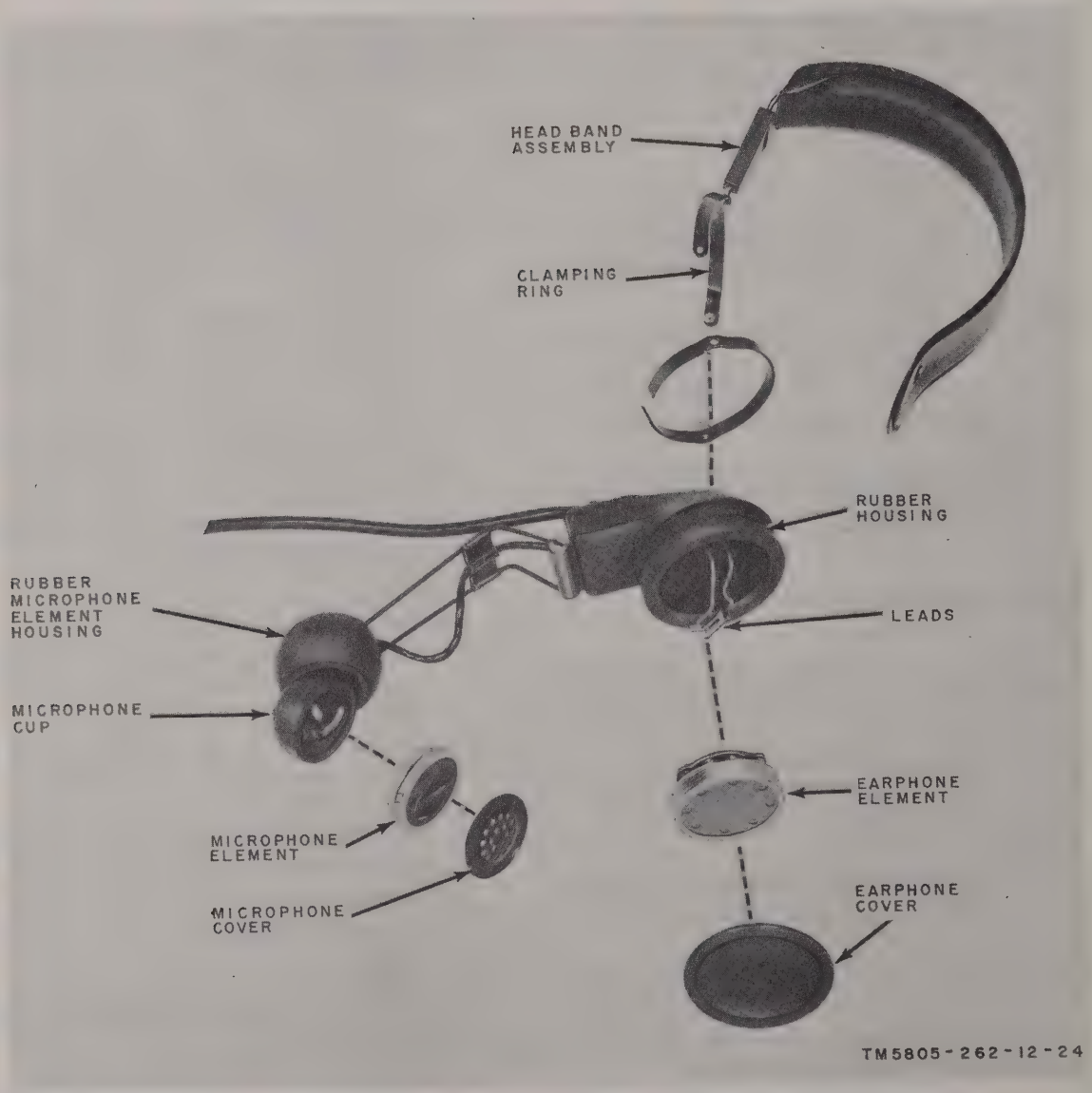


Figure 24. Handset-Headset H–81A/PT, H–144/U, or H–144A/U exploded view.

CHAPTER 5

SHIPMENT AND LIMITED STORAGE AND DEMOLITION TO PREVENT ENEMY USE

Section I. SHIPMENT AND LIMITED STORAGE

51. Disassembly

The following instructions may be used as a guide for preparing the SB–22(*)/PT for transportation and storage.

a. Open the rear door of the switchboard and disconnect the line wires and the ground wire.

b. Remove the battery case and remove *all* batteries. Replace the battery case in the rear compartment.

c. Close the rear cover. Set the switchboard upright on the rear door.

d. Disconnect the operator's telephone set from the operator's pack and place it in the switchboard cover. Strap it in position with the retaining straps.

e. Remove the operator's plug from the operator's jack and lay the cord on the line packs.

f. Fold the handle on the hand ringing generator handwheel into the wheel.

g. Replace the front cover.

52. Repacking for Shipment or Limited Storage

The exact procedure for repacking depends on the material available and the conditions under which the equipment is to be shipped or stored. Adapt the procedures outlined below whenever possible. The information concerning the original packing (para 11) will also be helpful.

a. Materials Required. The following materials are required for packing Switchboard, Telephone, Manual SB–22(*)/PT. For stock numbers of materials, consult SB 38–100.

Materials	Quantity
Corrugated cardboard	23 sq ft
Waterproof paper	23 sq ft
Waterproof tape	30 running ft
Moisture-vaporproof barrier	12 sq ft
Nailed wooden box	9½ x 28½ x 16½
Steel strap, ½-inch	14 running ft

b. Packing.

(1) Wrap the switchboard and the accessory kit in waterproof paper and seal the package with waterproof tape.

(2) Wrap the switchboard and the accessory kit in corrugated cardboard and seal the packages with waterproof tape.

(3) Line the nailed wooden box with moisture-vaporproof barrier.

(4) Place the switchboard and the accessory kit in the nailed wooden box.

(5) Place the cover on the nailed wooden box and secure it in place with nails.

(6) Place the steel straps around the box and secure them in accordance with the recommended procedures.

Section II. DEMOLITION TO PREVENT ENEMY USE

53. Authority for Demolition

Demolition of the equipment will be accomplished only upon order of the commander. Use the demolition procedures outlined in paragraph 54 to prevent the enemy from using or salvaging the SB–22(*)/PT.

Note. Before attempting to destroy the SB–22/PT, remove the battery case, all of the line packs, and the operator's pack from the switchboard case.

54. Methods of Destruction

Use any or all methods listed below to destroy the equipment.

a. Smash. Smash the plugs, signals, jacks, operator's telephone set, hand ringing generator, connectors, and switches; use axes, sledges, pickaxes, crowbars, or other heavy tools.

b. Cut. Cut all cords and wiring; use axes, handaxes, or machetes.

c. Burn. Burn all wiring, cords, and the operator's telephone set; use gasoline, kerosene, oil, flamethrowers, or incendiary grenades.

d. Bend. Bend the switchboard case, battery case, line packs, and operator's pack; use sledges, axes, crowbars, and other heavy tools.

e. Explode. If explosives are necessary, use primacord, TNT, dynamite, or other explosives.

f. Dispose. Bury or scatter the destroyed parts in slit trenches, foxholes, or throw them into streams.

APPENDIX I

REFERENCES

1. The following is a list of applicable references for the operator and installer of Switchboards, Telephone, Manual SB–22/PT and SB–22A/PT:

ACP–126	Title classified.
SB 38–100	Preservation, Packaging, and Packing Materials, Supplies, and Equipment used by the Army.
TM 11–676	Grounding Procedure and Protective Devices.
TM 11–5805–246–10	Operator's Manual: Terminal, Telegraph TH–5/TG.
TM 11–5815–206–12	Operation and Organizational Maintenance: Teletypewriter Set AN/PGC–1 and Teletypewriters TT–4A/TG and TT–4B/TG.

2. Additional references concerning maintenance of this equipment are as follows:

TM 11–5965–206–12P	Operator's, Organizational Maintenance Repair Parts and Special Tools List and Maintenance Allocation Chart for Handset-Headsets H–144/U, H–144A/U, and H–144B/U.
TM 11–5965–207–12P	Operator's, Organizational Maintenance Repair Parts and Special Tools List and Maintenance Allocation Chart for Handset-Headsets H–81/U and H–81A/U.
TM 11–5805–257–12P	Operator's, Organizational Maintenance Repair Parts and Special Tools List and Maintenance Allocation Chart for Generators, Ringing, Hand G–42/PT and G–42A/PT.

APPENDIX II

MAINTENANCE ALLOCATION

Section I. INTRODUCTION

1. Scope

This appendix assigns maintenance functions and repair operations to be performed by the lowest appropriate maintenance echelon. It also lists the tools and test equipment authorized for each echelon of maintenance.

2. Maintenance Allocation Chart Columns

a. Part or Component. This column lists the nomenclature or standard item name. Additional descriptive data are included only where clarification is necessary to identify the part. Components and parts comprising a major end item are listed alphabetically. Assemblies and subassemblies are in alphabetical sequence with their components listed alphabetically immediately below the assembly listing.

b. Maintenance Function. This column indicates the various maintenance functions allocated to the echelon capable of performing the operations.

(1) *Service.* To clean, to preserve, and to replenish fuel and lubricants.

(2) *Adjust.* To regulate periodically to prevent malfunction.

(3) *Inspect.* To verify serviceability and to detect incipient electrical or mechanical failure by scrutiny.

(4) *Test.* To verify serviceability and to detect incipient electrical or mechanical failure by use of special equipment such as gages and meters.

(5) *Replace.* To substitute serviceable assemblies, subassemblies and parts for unserviceable components.

(6) *Repair.* To restore an item to serviceable condition through correction of a specific failure or unserviceable condition. This function includes but is not limited to, inspecting, cleaning, preserving, adjusting, replacing, welding, riveting, and straightening.

(7) *Rebuild.* To restore an item to a standard as near as possible to original or new condition in appearance, performance, and life expectancy. This is accomplished through the maintenance technique of complete disassembly of the item, inspection of all parts or components, repair or replacement of worn or unserviceable elements using original manufacturing tolerances and/or specifications and subsequent reassembly of the item.

c. 1st, 2d, 3d, 4th, 5th Echelon. The symbol X indicates the echelon responsible for performing that particular maintenance operation, but does not necessarily indicate that repair parts will be stocked at that level. Echelons higher than the echelon marked by X are authorized to perform the indicated operation.

d. Tools Required. This column indicates codes assigned to each individual tool equipment, test equipment, and maintenance equipment referenced. The grouping of codes in this column of the maintenance allocation chart indicates the tool, test, and maintenance equipment required to perform the maintenance function.

e. Remarks. Entries in this column will be utilized when necessary to clarify any of the data cited in the preceding columns.

3. Maintenance by Using Organizations

When this equipment is used by signal service organizations organic to theater headquarters or communication zones to provide theater communications, those maintenance functions allocated up to and including fourth echelon are authorized to the organization operating this equipment.

4. Mounting Hardware

The basic entries of the maintenance allocation chart do not include mounting hardware such as screws, nuts, bolts, washers, brackets, clamps, etc.

5. Allocation of Tools for Maintenance Functions

a. Tools Required for Maintenance Functions. This column lists tools, test, and maintenance equip-

ment required to perform the maintenance functions.

b. 1st, 2d, 3d, 4th, 5th Echelon. A dagger (†) symbol indicates the echelons allocated the facility.

c. Tool Code. This column lists the tool code assigned.

d. Remarks. Entries in this column are used to clarify data in the other columns.

Section II. MAINTENANCE ALLOCATION CHART

(1) PART OR COMPONENT	(2) MAINTENANCE FUNCTION	(3) 1ST ECH	(4) 2ND ECH	(5) 3RD ECH	(6) 4TH ECH	(7) 5TH ECH	(8) TOOLS REQUIRED	(9) REMARKS
SWITCHBOARD, TELEPHONE, MANUAL SB-22/PT; SB-22A/PT	service	X						
	adjust		X				2-7	
	inspect	X						
	test		X				6	
				X			1	
					X		1-3-4-5	
	repair			X			8	
	rebuild					X	9	
ACCESSORY KIT MX-230/PT; MX-230A/PT	replace		X					
	repair				X			
CASES	replace		X					
CATCH, LUGGAGE	replace			X				
DUMMY PLUG, TELEPHONE	replace				X			
GASKET	replace				X			
STRAP, CARRYING	replace		X					
SWITCHBOARD ACCESSORY KIT MX-2915/PT	replace		X					
CASES	replace		X					
CATCH, LUGGAGE	replace			X				
DUMMY PLUG, TELEPHONE	replace				X			
GASKET	replace				X			
STRAP, CARRYING	replace		X					
TELEPHONE CIRCUIT, TRUNK JACK TA-326/PT	replace		X					
CAPACITORS	replace			X				
COILS, INDUCTION	replace			X				
CONNECTOR ASSEMBLY	replace			X				
REEL AND CORD ASSEMBLY	replace				X			
CORD ASSEMBLY	replace			X				
PLUG	replace			X				
TERMINAL LUG	replace			X				

(1) PART OR COMPONENT	(2) MAINTENANCE FUNCTION	(3) 1ST ECH.	(4) 2ND ECH	(5) 3RD ECH	(6) 4TH ECH.	(7) 5TH ECH.	(8) TOOLS REQUIRED	(9) REMARKS
~~SB-22/PT; SB-22A/PT (continued)~~								
JACK, TELEPHONE	replace				X			
PLATE, IDENTIFICATION	replace				X			
PLATE, RETAINER	replace				X			
SIGNAL SWITCHBOARD	replace				X			
LENS, INDICATOR	replace		X					
RECTIFIER, SILICON POWER	replace				X			
WASHER (PLASTIC, TELEPHONE JACK)	replace			X				
NUT (SPECIAL, TELEPHONE JACK)	replace			X				
SEAT, TELEPHONE PLUG	replace			X				
RESISTORS	replace			X				
EYELET, METALLIC	replace			X				
BOLT	replace			X				
CASE BATTERY	replace		X					
CONTACT ASSEMBLIES	replace		X					
GASKET	replace		X					
HOLDER BATTERY	replace		X					
CLIP, ELECTRICAL	replace			X				
HANDSET-HEADSET H-81A/U								See separate MAC
CONTACT ELECTRICAL	replace			X				
COVER	replace		X					
GASKET	replace			X				
STRAP, RETAINING	replace		X					
ECCENTRIC	replace			X				
FASTENER, LATCH	replace			X				
GASKET	replace			X				
HOLDER, BATTERY	replace				X			
INSULATOR BUSHING	replace				X			
INSULATOR PLATES	replace				X			
LATCH SET, MORTISE	replace			X				
NUT, SELF-LOCKING, HEXAGON	replace			X				
PACKING, PREFORMED	replace			X				
POST BINDING	replace			X				

(1) PART OR COMPONENT	(2) MAINTENANCE FUNCTION	(3) 1ST ECH	(4) 2ND ECH	(5) 3RD ECH.	(6) 4TH ECH.	(7) 5TH ECH.	(8) TOOLS REQUIRED	(9) REMARKS
S3-22/PT; SB-22A/PT (continued)								
TERMINAL, LUG	repair				X			
WEBBING, TEXTILE	replace				X			
TELEPHONE CIRCUIT, LINE JACK TA-222/PT	replace		X					
ARRESTOR, LIGHTNING	replace				X			
CONNECTOR ASSEMBLY	replace			X				
REEL AND CORD ASSEMBLY	replace				X			
CORD ASSEMBLY	replace			X				
PLUG, TELEPHONE	replace			X				
TERMINAL LUG	replace			X				
JACK TELEPHONE	replace				X			
LENS, INDICATOR LIGHT	replace		X					
PLATE IDENTIFICATION	replace				X			
PLATE, RETAINER	replace				X			
RECTIFIER	replace				X			
SEAT, TELEPHONE PLUG	replace			X				
SIGNAL, SWITCHBOARD	replace				X			
TELEPHONE CIRCUIT, OPERATOR'S TA-221/PT	replace		X					
BUZZER	replace			X				
CAPACITORS	replace			X				
COILS	replace			X				
CONNECTOR	replace			X				
CONNECTOR ASSEMBLY	replace			X				
CORD ASSEMBLY	replace			X				
PLUG, TELEPHONE	replace			X				
GENERATOR, RINGING HAND G-42/PT	replace				X			See separate list
INSULATION SLEEVING	replace			X				
JACK TELEPHONE	replace			X				
HANDLE	replace		X					
LAMP, INCANDESCENT	replace		X					
LIGHT, PANEL	replace			X				
SWITCHES	replace			X				
TERMINAL BOARDS	repair			X				

Section III. ALLOCATION OF TOOLS FOR MAINTENANCE

(1) TOOLS REQUIRED FOR MAINTENANCE FUNCTIONS	(2) 1ST ECH	(3) 2ND ECH.	(4) 3RD ECH.	(5) 4TH ECH	(6) 5TH ECH.	(7) TOOL CODE	(8) REMARKS
SB-22/PT; SB-22A/PT (continued)							
MULTIMETER AN/URM-105			†	†	†	1	If not available use TS-352/U
SCREWDRIVER TL-21		†				2	
TEST SET AN/PTM-6				†	†	3	
TEST SET I-181				†	†	4	
TEST SET TS-140/PCM				†	†	5	
TEST SET TS190/U		†				6	
TOOL EQUIPMENT TE-33		†				7	
TOOL EQUIPMENT TE-49			†	†		8	
TOOL EQUIPMENT TE-112				†	†	9	

APPENDIX III

BASIC ISSUE ITEMS LIST, SWITCHBOARDS, TELEPHONE, MANUAL SB–22/PT AND SB–22A/PT

Section I. INTRODUCTION

1. Scope

a. This appendix lists items supplied for initial operation and for running spares. The list includes tools, accessories, parts, and material issued as *part of* the major end item. The list includes all items authorized for basic operator maintenance of the equipment. End items of equipment are issued on the basis of allowances prescribed in equipment authorization tables and other documents that are a basis for requisitioning.

b. The columns are as follows:

(1) *Source, maintenance, and recoverability code.* Not used.

(2) *Federal stock number.* This column lists the 11-digit Federal stock number.

(3) *Designation by model.* A dagger (†) indicates the model in which the part is used.

(4) *Description.* Nomenclature or the standard item name and brief identifying data for each item are listed in this column. When requisitioning, enter the nomenclature and description on the requisition.

(5) *Unit of issue.* The unit of issue is the supply term by which the individual item is counted for procurement, storage, requisitioning, allowances, and issue purposes.

(6) *Expendability.* Expendable items are indicated by the letter X; nonexpendable items are indicated by NX.

(7) *Quantity authorized.* Under "Items Comprising an Operable Equipment," the column lists the quantity of items supplied for the initial operation of the equipment.

(8) *Illustrations.* The "Item No." column lists the figure in this manual that shows the equipment. These same designations are also used on any illustrations of the equipment.

2. Critical Items

A zero slash (ø) in the "Description" column indicates items that are expected to fail during the first year or items that will make the equipment inoperative if they fail.

3. Batteries

Dry batteries shown are used with the equipment but are not considered part of the equipment. They will not be preshipped automatically but are to be requisitioned in quantities necessary for the particular organization, in accordance with SB 11–6.

Section II. FUNCTIONAL PARTS LIST

(1) SOURCE MAINTENANCE AND RECOVERABILITY CODE	(2) FEDERAL STOCK NUMBER	(3) DESIGNATION BY MODEL	(4) DESCRIPTION	(5) UNIT OF ISSUE	(6) EXPENDABILITY	(7) QUANTITY AUTHORIZED	(8) ILLUSTRATIONS FIGURE NO	(9) ILLUSTRATIONS ITEM NO
		1 2	ITEMS COMPRISING AN OPERABLE EQUIPMENT					
			SWITCHBOARD, TELEPHONE MANUAL, SB-22/PT; SB-22A/PT					
			NOTE: Model Column 1 refers to SB-22/PT; Column 2 refers to SB-22A/PT					
	5805-257-3602		SWITCHBOARD, TELEPHONE, MANUAL SB-22/PT	ea	NX		1	
	5805-715-6171		SWITCHBOARD, TELEPHONE, MANUAL SB-22A/PT	ea	NX		1	
	Ord thru AGC	† †	TECHNICAL MANUAL TM 11-5805-262-12	ea	X	2		
	5805-356-2693	†	ACCESSORY KIT MX-230/PT; MX-230A/PT	ea	X	1	6	
	6135-120-1020	† †	O BATTERY BA-30	ea	X	4	12	1
	5805-356-3576	† †	COVER: covers front of switchboard; Sig dwg No. SC-B-84395	ea	X	1	1	1
	5965-519-9366	† †	HANDSET-HEADSET H-81A/U	ea	NX	1	7	
			OR					
	5965-682-2769	† †	HANDSET-HEADSET H-144/U; H-144A/U	ea	NX	1	7	
	5965-217-2558	† †	STRAP, RETAINING: holds headset in cover for shipping; Sig dwg SC-B-84404	ea	X	2	1	2
	5805-715-6170	†	SWITCHBOARD ACCESSORY KIT MX-2915/PT	ea	NX	1	6	
			ACCESSORY KIT MX-230/PT; MX-230A/PT					
	5805-392-8058		CASE: carrier for spare parts and accessories; Fed Tele and Rad part/dwg No. BA-31062	ea	NX	1	6	1 or 6
	6240-201-1200		CASE, LAMP: used to carry spare lamps; Sig dwg No. SC-D-142267-1	ea	X	1		
	6240-196-4501		LAMP, INCANDESCENT: Sig dwg No. SC-D-84552-6	ea	X	2	6	2

(1) SOURCE MAINTENANCE AND RECOVERABILITY CODE	(2) FEDERAL STOCK NUMBER	(3) DESIGNATION BY MODEL	(4) DESCRIPTION	(5) UNIT OF ISSUE	(6) EXPENDABILITY	(7) QUANTITY AUTHORIZED	(8) ILLUSTRATIONS FIGURE NO.	(9) ILLUSTRATIONS ITEM NO.
			SB-22/PT; SB-22A/PT (continued)					
	5805-313-3548		STRAP, CARRYING: for accessory kit; Fed Tele and Rad part/dwg No. BP -62007	ea	X	1	6	3
	5805-503-3337		TELEPHONE CIRCUIT, LINE JACK TA-222/PT	ea	NX	3	6	4
			SWITCHBOARD ACCESSORY KIT MX-2915/PT					
			CASE ACCESSORY: carrier for spare parts and accessories; (++LOWa25-10/1)	ea	X	1	6	1
	6240-201-1200		CASE, LAMP: used to carry spare lamps; Sig dwg No. SC-D-142267-1	ea	X	1		
	6240-196-4501		LAMP, INCANDESCENT: Sig dwg No. SC-D-81552-6	ea	X	1	6	2
	5805-313-3548		STRAP, CARRYING: for accessory kit; Fed Tele and Rad part/dwg No. BP-62007	ea	X	1	6	3
	5805-503-3337		TELEPHONE CIRCUIT, LINE JACK TA-222/PT	ea	NX	2	6	4
	5805-715-6175		TELEPHONE CIRCUIT, TRUNK JACK, TA-326/PT	ea	NX	1	6	5
			RUNNING SPARES AND ACCESSORY ITEMS					
			SWITCHBOARD, TELEPHONE MANUAL, SB-22/PT; SB-22A/PT					
			ACCESSORY KIT MX-230/PT; MX-230A/PT					
			SWITCHBOARD ACCESSORY KIT MX-2915/PT					
			NO PARTS AUTHORIZED FOR STOCKAGE AT FIRST ECHELON					

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NG: State AG (3); Units—Same as Active Army except allowance is one copy to each unit.

USAR: None.

For explanation of abbreviations used, see AR 320–50.

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